Basic Organic Chemistry Laboratory (Chem 102.1)
Chemistry & Biochemistry

Spring 2026 CHEM102.1 Section Number: 2 (38532) (Meeting Day/Time: We / 1:40 PM - 4:30 PM)
Lab Instructor's Name: Dr. Jim Dimitrakopoulos
Instructor's Email: jim.dimitrakopoulos@qc.cuny.edu
Office hour (In-person): Tuesday 4:30 pm - 5:30 pm
Lab room: Remsen 351

Coordinator: Prof. Sanjai Pathak (Sanjai.kumar@qc.cuny.edu)
[Note: Students should contact their Lab Instructor for ALL lab-related questions.]

Course Description

Students will learn fundamental organic laboratory techniques, including the isolation, purification, and identification of organic compounds. Techniques such as chromatography and chemical tests will be emphasized, with a focus on problem-solving through the application of these analytical methods. Structural organic chemistry, a key topic in the lecture portion of the course, will be explored through hands-on molecular modeling sessions. Additionally, students will gain experience in preparing compounds and mixtures. By the end of the course, they will have developed a solid foundation in basic organic laboratory procedures. They will also be trained in maintaining an organic laboratory notebook and following essential safety protocols, including proper handling of hazardous waste.

Course Requirements

PREREQ or COREQ: CHEM 1023. PRE: C or better in CHEM 1013 and 1011 (or CHEM 1134 and 1131 or CHEM 1144 and 1141

Course Goals

To introduce students to essential reactions and laboratory techniques involving organic compounds and their derivatives.

Course Learning Objectives

After the completion of the class, students in Chem 102.1 lab will be able to:

1. Apply safe laboratory practices, including the proper use of protective gear and the safe handling of laboratory glassware, equipment, and chemical reagents.
2. Identify the risks associated with specific reagents used in each experiment by referencing the MSDS Database.
3. Write a comprehensive laboratory report (see below, page 3).
4. Calculate the limiting reagent, yield, and percent yield for reactions, with correct usage of significant figures.
5. Identify laboratory instruments used to determine product identity, purity, and yield.
6. Perform basic laboratory techniques, including recrystallization, vacuum filtration, aqueous extraction, and thin layer and column chromatography.

Books, materials, tools, and accounts

Queens College Online Bookstore: https://qc.textbookx.com/institutional/index.php

Text: Laboratory Experiments for Introduction to General, Organic and Biochemistry, F. Bettelheim and J. Landesberg, 8th Edition, Brooks/Cole, 2013 (ISBN-10: 1133106021; ISBN-13: 978-1133106029)

Carbonless Lab Notebook (Scientific Grid Format) - 8.5" x 11", 50 Sets of Pages, 100 Sheets Total - Duplicator [Wire-O Bound]

Required Tools and Accounts

CUNY Brightspace and Email

Technical Support

If you require technical help with your Queens College email or CUNYfirst/Brightspace account please contact the Queens College helpdesk by emailing support@qc.cuny.edu or visiting their website: https://www.qc.cuny.edu/Computing/helpdesk/Pages/Welcome.aspx.

SAFETY FIRST

The following safety guidelines must ALWAYS be followed:

- Cellphone use for texting and calls is not permitted in the lab.
- Goggles must be worn at all times in the lab, even if you have completed your experiment or wear prescription glasses.
- Food and drink are strictly prohibited in the laboratory.
- Never leave a flame unattended.
- Tie back long hair and secure all loose clothing before conducting experiments.
- Feet must be completely covered in the lab—open-toed shoes, sandals, flip-flops, or similar footwear are not allowed.
- Report any accidents immediately to your lab instructor.
- No running or throwing anything in the lab.
- Read the lab and procedure before class as part of your safety preparation. Failure to do so will result in an automatic F for the lab.
- Listen carefully to your lab instructor for safety instructions and any procedure modifications.
- Dispose of chemical waste properly. Your instructor will provide specific instructions on how to handle waste for each experiment.

Failure to adhere to these safety guidelines will result in points being deducted from your lab report and may lead to your removal from the lab and an automatic failure for the experiment.**Chemistry**

102.1 Grading Rubric

Assessment: Lab instructors will assess students by collecting lab notebooks, reviewing laboratory products for yield, purity, and the accuracy of reported results. Additionally, students will be observed during lab sessions and evaluated on their technique and adherence to safety protocols.

Grade Breakdown

Written Lab reports and lab notebooks	30%
Lab Results	25%
6 Lab Quizzes	15%
Performance in the Laboratory	15%
Lab Final Exam	15%

Grading details:

Lab Notebook: You are required to use a carbonless organic chemistry notebook to record all your work. Your lab notebook will be graded based on clarity, accuracy, and thoroughness.

Your lab notebook must include the following components for each experiment:

1. **Experiment**:
   - Title of the experiment
   - Date performed
   - Purpose of the lab
2. **Introduction**:
   - Summarize the objective of the experiment in your own words.
   - Include any relevant chemical formulas, structures, equations, and reactions.
   - Write down any important background information related to the experiment.
3. **Procedure**:
   - Summarize the experimental procedure in your own words.
   - Ensure the procedure is detailed and clear enough to follow without additional resources during the experiment.
   - You can organize this section step-by-step or as a "shopping list" of tasks.
   - Include both ***qualitative*** and ***quantitative*** observations as you write your procedure. ***Qualitative*** observations are what you see - any colors, color changes, smell, formation of precipitates, or everything dissolves to give a clear solution (for instance). ***Quantitative*** observations are things you measure, i.e. weights, volumes, melting or boiling points, etc., and must include the correct number of significant figures.

Safety:

4.
   - List the chemicals used in the experiment and outline their safety precautions.
   - Look up and summarize the MSDS (Material Safety Data Sheet) for each chemical.
   - Note the disposal instructions for the chemical waste.
   - You can find MSDS information on the ChemWatch website:
     - Website: http://jr.chemwatch.net/chemwatch.web
     - Account: queensmsds

    - Username: everyone
    - Password: eqkq+2SFEl4= (the character before 4 is a lowercase L)
5. **Datasheet**:
    - Create a clear data sheet in your notebook (do not paste the sheet from the lab book).
    - Tables should be neatly drawn using a ruler.
6. **Conclusion / Discussion**:
    - Summarize your data and explain whether the experiment was successful.
    - Discuss any errors that may have occurred during the experiment.

Important Notes:

- **Pre-lab Requirements**:
    - Sections 1-5 (Pre-lab and an empty data sheet) must be completed before you attend lab. ***Leave space for your observations.***
    - The instructor will check your notebook before the lab and initial it.
    - Failure to complete these sections will result in a zero for the lab, and you will not be allowed to perform the experiment that day.
- **Notebook Submission**:
    - Your notebook will be collected after every two labs.
    - Completed labs must be submitted to your instructor for grading.
- **Individual Work**:
    - All experiments are to be performed individually unless otherwise stated by your instructor.

You will be graded based on your individual performance, which accounts for 15% of your grade (5% for each category) as described below.

Criteria for Performance in the Laboratory: Class performance includes your lab techniques, efficiency of work, safety, independence, and cleaning of station as well as disposal of waste. Details below:

1. **Safety**:
    - Safety is paramount. Failure to work safely will result in point deductions at the instructor's discretion.
    - **Eye protection and a lab coat** must be worn at all times in the lab. Failure to comply will result in a **zero for the day** and/or **dismissal from the lab** with no possibility of make-up.
    - Know the locations of the **safety shower, eyewash station, and fire extinguisher**.
    - Follow proper **chemical waste disposal** protocols. If you're unsure, ask.
    - Points will be deducted for unsafe practices, violations of waste protocols, or failure to follow safety rules. You may be ejected from the lab and receive a **zero** for that day's work.
2. **Independence**:
    - Your ability to work and think independently, as assessed by your instructor.
3. **Efficiency, Effectiveness, and Cleanness**:
    - Your ability to efficiently complete the experiment within the allotted lab time.
    - This also includes the quality and accuracy of your results - i.e. lab technique.

- Clean your workbench, hood, and any common areas (such as chemical storage, balances, and waste stations).
- Properly dispose of waste materials.

Quizzes:

- You are scheduled to take **6 quizzes** throughout the course.
- Quizzes are **not cumulative** but will cover material from the previous lab and the lab scheduled for the day of the quiz. You must have a non-graphing calculator (not your cellphone calculator).

Final Exam:

- The final exam will include **conceptual and procedural questions** based on the experiments performed during the course.
- There will also be questions specific to each lab.
- Bring a non-graphing calculator to the final.
- **Make-up exams are not allowed**. You must attend the final exam as scheduled in the syllabus, not according to CUNYFirst.

Important Note on Missed Classes and Late Work

- **Attendance in the laboratory is mandatory.** Students must arrive on time.
- **No make-up labs are allowed.** However, if you miss a lab for a valid reason (e.g., illness with a note from a registered physician, court appearance with documentation from the court, or a death in the family), your absence may be excused with proper documentation.
- A missed lab will receive no credit and will not be factored into your final grade only if your absence is excused by your instructor with valid documentation.
- A second missed lab, if excused, will require you to complete an alternate assignment provided by the instructor.
- Further absences are not excusable.

W and WU Grade policy: THE DROP DEADLINE (W OR CHANGE TO P/NC) HAS BEEN CHANGED FROM THE COVID-ERA LAST DAY OF CLASS TO April 13, 2026.
Students who do not officially withdraw by April 13, 2026 (and receive a W grade) but stop attending classes and do not participate in any way after the withdrawal date will be given a WU grade. Any participation in class (i.e. lab work, homework, taking quizzes and exams) after the withdrawal date will disqualify you from receiving the WU grade, and you will be given the appropriate letter grade.

Reasonable Accommodations for Students with Disabilities

Students with disabilities needing academic accommodation should register with the Special Services Office by emailing QC.SPSV@qc.cuny.edu.

For more information about services available to Queens College students, visit the Office of Special Services website:
https://www.qc.cuny.edu/studentlife/services/specialserv/Pages/default.aspx

CUNY Policy on Academic Integrity

Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity- policy/. Please read this document, paying careful attention to the sections on plagiarism and Internet plagiarism. If you are not sure how to cite work you have found on the internet, please review the ACS Guidelines provided by the American Chemical Society.

Chem 102.1
Class Schedule
Spring 2026

This schedule is subject to change. Students will be notified in Writing/Email/Brightspace of any changes.

Week	Date	Experiment	Page
1	1/28	Check-in. Review of safety rules and instruction for waste disposal.	
2	2/4	**Experiment 1** Isolation of pure acetylsalicylic acid from aspirin tablets	Handout
3	2/11	**Experiment 2**: Molecular Models (Quiz 1)	239
4	2/18	**Experiment 3:** Identification of Hydrocarbons	289
5	2/25	**Experiment 4:** Chromatography (Quiz 2)	275
6	3/4	**Experiment 5:** Identification of Alcohols and Phenols	301
7	3/11	**Experiment 6:** Identification of Aldehydes and Ketones (Quiz 3)	313
8	3/18	**Experiment 7:** Carboxylic Acids and Esters	329
9	3/25	**Experiment 8:** Amines and Amides (Quiz 4)	341
10	4/1	**Experiment 9:** Preparation of Aspirin	365
11	4/15	**Experiment 10:** Isolation of Caffeine from Tea Leaves (Quiz 5)	377 & Handout
12	4/22	**Experiment 11:** Carbohydrates	389
13	4/29	**Experiment 12:** Preparation of Hand Cream (Quiz 6)	423
14	5/6	Check-out: Final Exam- Open Notebook	

Queens College of the City University of New York
Department of Chemistry and Biochemistry
General Chemistry II
Chem 114.4 **Lecture Schedule** **Spring 2026**

Instructor: Joshua Mukhlall, Ph. D
Office Hour: Thursday 4:30-5:00 pm and 8:50-9:20 pm
E-mail: joshua.mukhlall@qc.cuny.edu

Recitation: Thur 5:00-5:50 pm, Remsen Hall 017
Lecture: Thru 6:00-8:50 pm, Remsen Hall 017

General Chemistry 114.4 is the second semester of a two-semester science major/pre-health professions level introductory college chemistry course. The laboratory course 114.1 is a separate co-requisite for chemistry 114.4 and is administered and graded separately. This course is required for more advanced study in chemistry, biochemistry, and biology. It is intended for students in the physical and life sciences, science education, pre-health professional students, and pre-engineering students and is designed to provide a thorough knowledge of facts and theory in the fundamental areas of chemistry. As appropriate, topics are presented in terms of contemporary scientific issues such as global warming, energy production, and hazardous waste. The relationship between chemistry and society is discussed.

Learning Objectives:

- Develop an understanding of intermolecular forces
- Understand quantitative aspects of phase changes
- Interconvert concentration units
- Understand colligative properties of solutions
- Determine the extent of chemical reactions
- Solve problems involving rates and mechanisms of chemical reactions
- Identify and solve problems involving acids and bases
- Solve equilibrium problems
- Develop an understanding of chemical change and electrical work

Lecture Textbook: *Chemistry* by J. Overby, 15th Edition, McGraw Hill, 2025. The eBook is available with purchase of the required on-line Aleks assignments. You have two options via the QC Bookstore:
Aleks 360 Online Access for Chemistry, 15e (License: 130 days - until 05/31/2026)) ISBN: 9781266454042

Aleks 360 Online Access for Chemistry, 15e (License: 365 days - until 01/21/2027) ISBN: 9781265229092

Grading:

Three Chapter Exams	**50%**
Final Exam (Comprehensive)	**25%**
Quizzes	**10%**
Aleks Homework	**15%**
Total	**100%**

Three Chapter Exams (50%): The format of the exams might be a combination of multiple choice, fill in the blank, and short response, including showing calculations. **There are no make-up exams.**

Final exam (25%): The final exam will cover all chapters covered during the semester. The exam will consist of 50-60 multiple choice questions.

Quizzes (10%): Quizzes will be given during the recitation period. Each quiz will be based on the material covered in the lecture during the previous class. The format of the quizzes might be a combination of multiple choice, fill in the blank, and short response, including showing calculations. **There are no make-up exams.**

ALEKS Homework (15%): Aleks homework should be completed one week after we've covered the full chapter in lecture. After every few modules, there may be a "Post Objective Progress Assessment" – **Do not click "I don't know" unless you don't know. This will set you back. There will be no extensions**.

Bring Photo ID to quizzes and exams.
You will not be permitted to use books, notes, cell phones, computers, iPads or programmable calculators during quizzes and exams. **You are required to get a non-programmable scientific calculator for this course**. You will not be allowed to share a calculator during quizzes and exams.
The textbook contains many problems similar to those that will be given on the exams. You should do the problems that appear in the body of the text and at the end of each chapter.
If you have any questions concerning the grading, please see me within 3 days following the quiz/exam. All re-grade requests must be made in writing and attached to the quiz/exam; do not under any circumstances write anything on the quiz/exam itself. Quizzes/Exams are Xeroxed prior to being returned. There are no make-up exams. Written verification of your reason for missing an exam is required; please see me if you missed an exam.

You will need access to Brightspace for handouts – be sure to provide a valid e-mail address that you monitor. Announcements will be made via Brightspace and e-mail.

Tentative Lecture Schedule

Dates	**Chapters**
01/29	Chapter 11: Intermolecular Forces and Liquids and Solids
02/05 and 02/19	Chapter 12: Physical Properties of Solutions
02/19 and 02/26	Chapter 13: Chemical Kinetics
03/05	Exam #1
03/05 and 03/12	Chapter 14: Equilibrium
03/19 and 03/26	Chapter 15: Acids and Bases
04/16	Exam #2
04/16 and 04/21	Chapter 16: Acid-base Equilibria and Solubility Equilibria
04/23 and 04/30	Chapter 17: Entropy, Gibbs Energy, and Equilibrium
04/30 and 05/07	Chapter 18: Electrochemistry
05/14	Exam #3
05/14	Chapter 23: Coordination Chemistry
05/21	Final Exam (covers all chapters)

College Close February 12th; No Classes April 2nd and April 9th (Spring Recess); Classes follow a Thursday schedule on Tuesday April 21st.
Any changes to the exam dates will be announced in class at least one week in advance.

How to access Aleks Homework Assignments?
For this course you will be required to purchase McGraw-Hill Education Aleks to complete homework assignments. The eBook is available with purchase of the on-line assignments. You are not required to have a print text. Please be aware that if you purchase a used textbook, you will still need to purchase access to Aleks (which includes access to the eBook).

Go to the Content section of Brightspace, click on the ALEKS link (https://www.aleks.com/login), and log in (if you've used ALEKS before) or click the 'New

Student? SIGN UP NOW!' button. Then enter the course code: **TEHMR-96UMP** and click 'Continue'. Check that the section is correct, if so, click 'Continue' again. Choose 'I have never used Aleks before or I do not have an Aleks login name' and 'Continue'. Enter your Aleks Registration Code (provided on the access card shipped to you, after purchasing from the QC Online Bookstore), enter the code and click 'Continue'. If you haven't received your Registration Cards yet, you can use the Financial Aid Access Code, **7D7EB-09E18-7DBD7-BB31B**, but be sure to purchase access at above immediately, as it will take 7-10 business days to ship. Complete the remaining steps to finish registering for Aleks.

Important Notes

- Please purchase the Aleks homework as soon as possible (within the first week). It will take a week to deliver and your courtesy access is only available for two weeks. Do not wait until your courtesy access expires. No student will be exempt from completing the ALEKS assignments.
- There will be no extensions on ALEKS assignments. The date is posted and set.
- There will be no extra credit provided at the end of the semester.
- An INC grade will not be given when a student is failing the course.
- The last day to withdraw or P/NC the course is April 13th
- There will be no curve in this class.
- No material obtained from this course should be distributed, sold, or purchased.
- No photographs or video recordings (audio or video) of classes may be made without written approval from the course instructor.
- A failing student will not be eligible to apply for retroactive withdrawal or INC grade request later in the course.
- Requests for Retroactive Withdrawal for current semester, INC grade: Evidence of good score in the exams/quizzes/homework indicating a passing grade in the course and sudden emergency situations preventing completion of the course is the minimum requirement for consideration. Talk to your instructor for options if you have a genuine situation. We are here to help.

REASONABLE ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Available accommodation for students with learning disabilities: Students with disabilities needing academic accommodation should register with the Special Services Office by emailing QC.SPSV@qc.cuny.edu. For more information about services available to Queens College students, visit the Office of Special Services website: https://www.qc.cuny.edu/sp/

CUNY POLICY ON ACADEMIC INTEGRITY: Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: https://www.cuny.edu/about/administration/offices/legal-affairs/policies-resources/academic-integrity-policy/

Statement on student wellness

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. QC student wellness services are available free of charge. You can learn more about confidential mental health services available on campus at: https://www.qc.cuny.edu/cs/

Use of Student Work

All programs in New York State undergo periodic reviews by accreditation agencies. For these purposes, samples of student work are occasionally made available to those professionals conducting the review. Anonymity is assured under these circumstances. If you do not wish to have your work made available for these purposes, please let the professor know before the start of the second class. Your cooperation is greatly appreciated.

Course Evaluations

During the final four weeks of the semester, you will be asked to complete an evaluation for this course by filling out an online questionnaire. Please participate in these course evaluations. Your comments are highly valued, and these evaluations are an important service to fellow students and to the institution since your responses will be pooled with those of other students and made available online. Please note that all responses are completely anonymous; no identifying information is retained once the evaluation has been submitted.

Tutoring or Other Support Services

QC offers different academic support services. The QC Learning Commons (https://www.qc.cuny.edu/academics/qclc/) provides peer tutoring, study spaces and other services. The Writing Center (https://www.qc.cuny.edu/academics/wc/) is a multilingual academic and intellectual support space where Queens College students work in collaboration with peer tutors to improve their writing.

Queens College of the City University of New York
Department of Chemistry and Biochemistry
Organic Chemistry I

Chem 251.1 **Lab Schedule, Remsen Annex 351** **Spring 2026**

Course Requirements:

Prerequisites for Chem 251.1: C or better in Chem 114.4 and 114.1
Pre or corequisite: Chem 251.4 (C or better if prerequisite)

LAB TEXT: *Macroscale and Microscale Organic Experiments*, Williamson and Masters, 7th ed.
Cengage Learning, 2017, ISBN: 978-1-305-57719-0 ***(NOT** the newer 8th edition)*

Chem 251.1 Section Number:
Lab Instructor:
Instructor's Email:
Lab Instructor's Office Hour (on-line):
Lab coat, safety goggles, and required glassware are provided upon check-in.
Coordinator: Prof. William H. Hersh (william.hersh@qc.cuny.edu)
[Note: Students should contact their lab instructor for all lab-related questions.]

All experiments to be done are the Macroscale version.

Week	Experiment	Williamson & Masters Chp (Page)
1	Check-in. No laboratory work can be done. Review of safety in the Orgo. Lab., Instructions on disposal of chemical waste, Lab. protocols, Maintenance of a laboratory note-book	Chp 1-2
2-3	I. Melting Point Determination Determination of Boiling Point via Distillation **(see Lab notes, use ether instead of Dichloromethane (DCM))** and via Micro Boiling Point Method	Chp 3 (48-55) Chp 5 (87) Chp 3 (55-60)
4	II. Isolation of Clove Oil from Cloves **Use ether for extraction rather than DCM**	Chp 6 (103), Exp 5
5	II (continued). Extraction: Isolation of Eugenol from Clove Oil. Thin Layer Chromatography of Clove Oil and of Eugenol (Instructor will cut TLC strips and provide instructions)	Continues p112-114
6	III. Crystallization i. Isolation of Crystalline Acetylsalicylic Acid from Aspirin tablets (Lab Notes) ii. Recrystallization of Benzil (Lab Notes)	 Lab Notes Chp 4 (82-3)
7	IV. Preparation of Cyclohexene	Chp 19 (336)
8	V. Preparation of 1-Bromobutane	Chp 16 (313)
9	VI. Nucleophilic Substitution Reactions of Alkyl Halides	Chp 17 (320)
10	VII. Oxidation of Cyclohexanol **Use ether for extraction rather than DCM**	Chp 22 (358), Exp 4
11	VIII. Grignard Reaction: Preparation of Triphenylmethanol	Chp 38 (493), Exp 4-7
12	Complete VIII. IX. Reactions of Triphenylmethanol – Parts 1, 2, and 3	Chp 33 (447) Exp 1-3
13	Finish IX and any other unfinished experiments	
14	Check out and Lab Final Exam. No laboratory work can be done.	
15	Final Exam will be during Final Exam week – See CUNYfirst	

It is important that you check the Chemistry 251 "Lab Notes" for details of all experiments, because there are sometimes significant changes from the procedures described in the laboratory manual.

Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit and will be dropped from final average calculation ONLY if your absence is excused by your lab instructor. A second missed lab, if excused by your instructor, will require completion of an alternate assignment given by your instructor in lieu of the lab experiment. Further absences are NOT excusable.

Safety glasses and lab coats are required in the laboratory at all times – even if you already wear glasses.
NO short pants, skirts, or open toe shoes are allowed: tie back long hair.
NO computer, tablet or cell phone use in the laboratory during class activities other than digital lab textbook.
Do not bring food, chewing gum, coats or backpacks into the lab – use the hall lockers.
All experiments are to be done individually – no team experiments.

Course Objectives: Students will continue to learn basic organic lab safety, waste disposal, and techniques, will continue to learn how to keep an organic laboratory notebook, and through the experiments for the identification of unknowns, start to learn to solve lab problems on their own. At the conclusion of this semester students will be prepared to do organic research if they so choose.

Assessment: You will need to keep a neat, legible laboratory notebook; a lined 100 page, 9 ¾ x 7 ½ inch composition book is best. Your lab instructor will periodically check your notebook, so it must be up-to-date, and will announce when it will be collected for grading. Lab books will not be accepted after the last day of lab class (i.e. Check Out day).

60% - lab book: pre-Lab (10%), Lab Report and Results (50%)
15% - Three Lab quizzes (unannounced, these will test lab material, not lecture material)
10% - Performance in the Laboratory (see below).
15% - A written 1 hour lab final. The lab final will cover lab safety, and the contents that were covered during the entire semester. It will not cover lecture material. You will need a calculator (no cell phones allowed).

Prelab Preparation AND Lab Reports
A. PRELAB: You need to type the title, the date of the experiment, the reaction scheme of the experiment and procedure in word document or PDF file. You will also create and fill out a table describing each reagent in the pre-lab. This includes reading the full experiment from start to finish in the lab manual and watching posted videos (if posted) on blackboard. You should review the safety protocols for each experiment. Hand in one copy of your pre-lab to the instructor check. After you finished the experiment, you need to write down your results in your hand-in prelab. **For lab safety, without the pre-lab, you will not be allowed to do the lab work**.

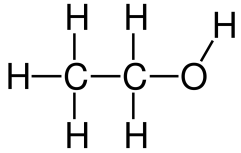
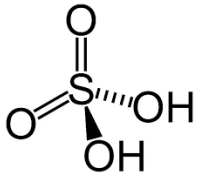
B. Lab Reports Format
For each experiment, the final lab report should include:

- **Title and date (10%):** Include your name, section number, experiment title, AND date of the experiment. Experiment title can be copied from the syllabus or lab book.

- **Introduction and Reaction Scheme (10%):** Explain the experiment in your own words. Include any equations and other scientific and mathematical explanations, i.e., the theory.

- **Procedure (10%):** Summary of the steps, materials, and apparatus of the experiment.
- **Reagents table (for lab safety) (10%)**
- **Table of chemical information (10%)**
- **Calculation and Results (10%):** Show all work; If there is a repetitive calculation, you need to show the equation and its use only once.
- **Discussion (20%):** State whether results were good or bad, and reasons why, what may have affected them, and any potential problems with the experiment. Discuss experimental errors that can account for it.
- **Conclusion (20%):** Summarize your final conclusions in this section. Finally, Lab Reports do not have to be excessively long, but they do have to cover all the important ideas of the experiment. Before class, write the title and the date the experiment is to be done, the reaction scheme of the experiment and procedure to be followed. You will also create and fill out a table describing each reagent to be handled during the lab.

An example of a reagent table:

Chemical Name and Structure	Classification	Hazards/Cautions
Ethanol, CH_3CH_2OH 	Flammable	Skin, eye irritant. Toxic. Keep away from flame.
Sulfuric Acid, H_2SO_4 	Acid	Very Hazardous. Corrosive. Will produce tissue damage and burns

An example of a table for chemical information

Substance	Molecular weight	amount used	m.p./b.p.	Physical appearance
Sodium borohydride	37.83 g/mol	0.2 g	400 °C	White crystals

You will fill in the "amount used" and "physical appearance" during the experiment. Following this table, you will complete a theoretical and percent yield calculation for your product. Finally, write a discussion of the experiment where you will remark on any observations that could have affected the final product and its yield and/or its physical appearance.

The criteria for Performance in the Laboratory:

1. **Safety:** If you do not work safely, you instructor will deduct points at their discretion. **Eye protection and lab coat must be worn at all times in the lab**; penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day's lab with no possibility of make-up [Points will be deducted from your final grade for safety offenses at instructor's discretion]. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt, ask! Points will be deducted for unsafe practices or violations of waste protocols; You may be ejected from lab and receive a zero (0) for that day's work.
2. **Independence**: Your ability to work and think independently, as determined by your instructor.
3. **Efficiency and Effectiveness**: Your ability to efficiently accomplish the goals of the experiment within the lab time frame. This also includes the quality of your results.

CHEM 2514 is a part of the Pathways General Education Program at Queens College, and this course fulfills the following pathways requirements.

Queens College General Education Statement: This course satisfies the Life and Physical Science (LPS) requirements of the Pathways General Education Required Core

All LPS courses must satisfy the following learning outcomes:

LPS 1: Identify and apply the fundamental concepts and methods of a life or physical science.
LPS 2: Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
LPS 3: Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
LPS 4: Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
LPS 5: Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

This course satisfies the following two Queens College General Education learning outcomes:

QC 1: Address how, in the discipline (or disciplines) of the course, data and evidence are construed and knowledge is acquired; that is, how questions are asked and answered.
QC 2: Position the discipline(s) in the liberal arts curriculum and the larger society

In Addition, this QC College Option SCI course satisfies the following three learning outcomes:

SCI 1: Familiarity with a body of knowledge in the physical or biological sciences.
SCI 2: Successful study of the methods of science, including the use of observation, the information of hypotheses and the testing of models.
SCI 3: Experience and awareness of the impact of science on modern society.

Queens College of the City University of New York
Department of Chemistry and Biochemistry
Organic Chemistry I
Chem 251.1 Lab Schedule, Remsen Annex 351 Spring 2026

Course Requirements:

Prerequisites for Chem 251.1: C or better in Chem 114.4 and 114.1
Pre or corequisite: Chem 251.4 (C or better if prerequisite)

LAB TEXT: *Macroscale and Microscale Organic Experiments*, Williamson and Masters, 7th ed.
Cengage Learning, 2017, ISBN: 978-1-305-57719-0 ***(NOT** the newer 8th edition)*

Chem 251.1 Section Number: 3
Lab Instructor: J. Eduardo Ocando
Instructor's Email: jocando@qc.cuny.edu
Lab Instructor's Office Hour:Tues. 5:30PM
Lab coat, safety goggles, and required glassware are provided upon check-in.
Coordinator: Prof. William H. Hersh (william.hersh@qc.cuny.edu)
[Note: Students should contact their lab instructor for all lab-related questions.]

All experiments to be done are the Macroscale version.

Week	Experiment	Williamson & Masters Chp (Page)
1	Check-in. No laboratory work can be done. Review of safety in the Orgo. Lab., Instructions on disposal of chemical waste, Lab. protocols, Maintenance of a laboratory note-book	Chp 1-2
2-3	I. Melting Point Determination Determination of Boiling Point via Distillation **(see Lab notes, use ether instead of Dichloromethane (DCM))** and via Micro Boiling Point Method	Chp 3 (48-55) Chp 5 (87) Chp 3 (55-60)
4	II. Isolation of Clove Oil from Cloves **Use ether for extraction rather than DCM**	Chp 6 (103), Exp 5
5	II (continued). Extraction: Isolation of Eugenol from Clove Oil. Thin Layer Chromatography of Clove Oil and of Eugenol (Instructor will cut TLC strips and provide instructions)	Continues p112-114
6	III. Crystallization i. Isolation of Crystalline Acetylsalicylic Acid from Aspirin tablets (Lab Notes) ii. Recrystallization of Benzil (Lab Notes)	 Lab Notes Chp 4 (82-3)
7	IV. Preparation of Cyclohexene	Chp 19 (336)
8	V. Preparation of 1-Bromobutane	Chp 16 (313)
9	VI. Nucleophilic Substitution Reactions of Alkyl Halides	Chp 17 (320)
10	VII. Oxidation of Cyclohexanol **Use ether for extraction rather than DCM**	Chp 22 (358), Exp 4
11	VIII. Grignard Reaction: Preparation of Triphenylmethanol	Chp 38 (493), Exp 4-7
12	Complete VIII. IX. Reactions of Triphenylmethanol – Parts 1, 2, and 3	Chp 33 (447) Exp 1-3
13	Finish IX and any other unfinished experiments	
14	Check out and Lab Final Exam. No laboratory work can be done.	

15	Final Exam will be during Final Exam week – See CUNYfirst	

It is important that you check the Chemistry 251 "Lab Notes" for details of all experiments, because there are sometimes significant changes from the procedures described in the laboratory manual.

Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit and will be dropped from final average calculation ONLY if your absence is excused by your lab instructor. A second missed lab, if excused by your instructor, will require completion of an alternate assignment given by your instructor in lieu of the lab experiment. Further absences are NOT excusable.

Safety glasses and lab coats are required in the laboratory at all times – even if you already wear glasses.
NO short pants, skirts, or open toe shoes are allowed: tie back long hair.
NO computer, tablet or cell phone use in the laboratory during class activities other than digital lab textbook.
Do not bring food, chewing gum, coats or backpacks into the lab – use the hall lockers.
All experiments are to be done individually – no team experiments.

Course Objectives: Students will continue to learn basic organic lab safety, waste disposal, and techniques, will continue to learn how to keep an organic laboratory notebook, and through the experiments for the identification of unknowns, start to learn to solve lab problems on their own. At the conclusion of this semester students will be prepared to do organic research if they so choose.

Assessment: You will need to keep a neat, legible laboratory notebook; a lined 100 page, 9 ¾ x 7 ½ inch composition book is best. Your lab instructor will periodically check your notebook, so it must be up-to-date, and will announce when it will be collected for grading. Lab books will not be accepted after the last day of lab class (i.e. Check Out day).

60% - lab book: pre-Lab (10%), Lab Report and Results (50%)
15% - Three Lab quizzes (unannounced, these will test lab material, not lecture material)
10% - Performance in the Laboratory (see below).
15% - A written 1 hour lab final. The lab final will cover lab safety, and the contents that were covered during the entire semester. It will not cover lecture material. You will need a calculator (no cell phones allowed).

Prelab Preparation AND Lab Reports
A. PRELAB: You need to type the title, the date of the experiment, the reaction scheme of the experiment and procedure in word document or PDF file. You will also create and fill out a table describing each reagent in the pre-lab. This includes reading the full experiment from start to finish in the lab manual and watching posted videos (if posted) on blackboard. You should review the safety protocols for each experiment. Hand in one copy of your pre-lab to the instructor check. After you

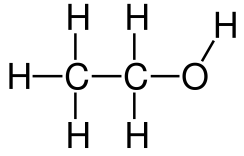
finished the experiment, you need to write down your results in your hand-in prelab. **For lab safety, without the pre-lab, you will not be allowed to do the lab work**.

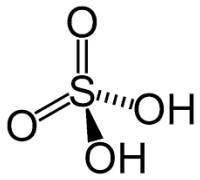
B. Lab Reports Format

For each experiment, the final lab report should include:

- **Title and date (10%):** Include your name, section number, experiment title, AND date of the experiment. Experiment title can be copied from the syllabus or lab book.
- **Introduction and Reaction Scheme (10%):** Explain the experiment in your own words. Include any equations and other scientific and mathematical explanations, i.e., the theory.
- **Procedure (10%):** Summary of the steps, materials, and apparatus of the experiment.
- **Reagents table (for lab safety) (10%)**
- **Table of chemical information (10%)**
- **Calculation and Results (10%):** Show all work; If there is a repetitive calculation, you need to show the equation and its use only once.
- **Discussion (20%):** State whether results were good or bad, and reasons why, what may have affected them, and any potential problems with the experiment. Discuss experimental errors that can account for it.
- **Conclusion (20%):** Summarize your final conclusions in this section. Finally, Lab Reports do not have to be excessively long, but they do have to cover all the important ideas of the experiment. Before class, write the title and the date the experiment is to be done, the reaction scheme of the experiment and procedure to be followed. You will also create and fill out a table describing each reagent to be handled during the lab.

An example of a reagent table:

Chemical Name and Structure	Classification	Hazards/Cautions
Ethanol, CH_3CH_2OH 	Flammable	Skin, eye irritant. Toxic. Keep away from flame.

Sulfuric Acid, H_2SO_4 	Acid	Very Hazardous. Corrosive. Will produce tissue damage and burns

An example of a table for chemical information

Substance	Molecular weight	amount used	m.p./b.p.	Physical appearance
Sodium borohydride	37.83 g/mol	0.2 g	400 ^oC	White crystals

You will fill in the "amount used" and "physical appearance" during the experiment. Following this table, you will complete a theoretical and percent yield calculation for your product. Finally, write a discussion of the experiment where you will remark on any observations that could have affected the final product and its yield and/or its physical appearance.

The criteria for Performance in the Laboratory:

1. **Safety:** If you do not work safely, you instructor will deduct points at their discretion. **Eye protection and lab coat must be worn at all times in the lab**; penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day's lab with no possibility of make-up [Points will be deducted from your final grade for safety offenses at instructor's discretion]. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt, ask! Points will be deducted for unsafe practices or violations of waste protocols; You may be ejected from lab and receive a zero (0) for that day's work.
2. **Independence**: Your ability to work and think independently, as determined by your instructor.
3. **Efficiency and Effectiveness**: Your ability to efficiently accomplish the goals of the experiment within the lab time frame. This also includes the quality of your results.

CHEM 2514 is a part of the Pathways General Education Program at Queens College, and this course fulfills the following pathways requirements.

Queens College General Education Statement: This course satisfies the Life and Physical Science (LPS) requirements of the Pathways General Education Required Core

All LPS courses must satisfy the following learning outcomes:

LPS 1: Identify and apply the fundamental concepts and methods of a life or physical science.
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LPS 4: Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
LPS 5: Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

This course satisfies the following two Queens College General Education learning outcomes:

QC 1: Address how, in the discipline (or disciplines) of the course, data and evidence are construed and knowledge is acquired; that is, how questions are asked and answered.
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In Addition, this QC College Option SCI course satisfies the following three learning outcomes:

SCI 1: Familiarity with a body of knowledge in the physical or biological sciences.
SCI 2: Successful study of the methods of science, including the use of observation, the information of hypotheses and the testing of models.
SCI 3: Experience and awareness of the impact of science on modern society.

Queens College of the City University of New York
Department of Chemistry and Biochemistry
Organic Chemistry I

Chem 251.4 **Lecture Schedule** **Spring 2026**

Course Requirements:

Prerequisites for Chem 251.4: C or better in Chem 114.4 and 114.1
Pre or corequisite: Chem 251.1 (C or better if prerequisite)

Note: a C- in any pre or corequisite will not permit you to take 251.4/251.1!
You must earn a C or better in Chem 251.4 and 251.1 to go on to Chem 252.

You will need access to Brightspace for handouts, including this syllabus. It is your responsibility to provide a valid e-mail address that you monitor. Announcements will be made via Brightspace and e-mail.

Lecture: M, W 1:40 - 3:30 PM, Remsen 017. There will be a 10 minute break and I am available then and normally after class if you have questions.

Professor William H. Hersh
Office Hour: Wednesday 11:00 - 11:50 AM
in Remsen 109 and by appointment if you have class or work scheduled Wednesday 11-12.
e-mail: william.hersh@qc.cuny.edu - only way to contact me (college phone does not work)

LECTURE TEXT and on-line Achieve Homework (Required): *Organic Chemistry*, 7th Ed., Loudon and Parise (2021). ***There are many options but you must purchase Achieve alone or as a package (see below); Achieve includes the text book in electronic form (E-book).***
The Achieve Link for this course is https://achieve.macmillanlearning.com/courses/ertjmg
If you are asked for the course code, it is ertjmg
Achieve will be active on January 12. You will have access to the E-book for 4 years, and to Achieve assignments for the number of terms you buy – two terms recommended if you will take Chem 252 Fall 2026.
Your choices:
1. Many purchase options and packages are available from the Macmillan website ***BUT THIS FIRST OPTION IS STRONGLY RECOMMENDED AND CANNOT BE FOUND ON THE MACMILLAN SITE EXCEPT BY USING THIS LINK OR (possibly) DOING A SEARCH WITH THE ISBN:***

Achieve for Organic Chemistry 7e (1-Term Online) & Study Guide and Solutions Manual 7e for Queens college
https://store.macmillanlearning.com/us/product/Organic-Chemistry/p/9781319481339

And for the 2-term edition
https://store.macmillanlearning.com/us/product/Organic-Chemistry/p/9781319481353

Prices are $136.99 for one term, $149.99 for 2 terms. These may also be available through the QC Bookstore.

If you already have the Study Guide and Solutions Manual for the 7th edition, there is no need to purchase - there is just one version.

Without the Solutions Manual (price probably $129.99, unknown for 2 term)

1-Term Achieve Access Card
https://store.macmillanlearning.com/us/product/Organic-Chemistry/p/9781319335854

2-Term Achieve Access Card
https://store.macmillanlearning.com/us/product/Organic-Chemistry/p/9781319335855

2. QC bookstore, one or two term Achieve (includes E-book) with or without the Study Guide/Solutions Manual may eventually be available, but is not at the moment.

The text contains many problems - you should do those that appear in the body of the text and at the end of each chapter - recommended problems are listed below in the Lecture Schedule. These problems will not be graded.

They should be done together with the required on-line problems (see below); the on-line problems are not enough by themselves to prepare you to do well in this course.

If you want to understand the lecture material, you must read the textbook chapter before class. For the vast majority of students, it is not possible to understand lecture material if you are seeing it for the first time in class! When you read the textbook and do problems in the text with the reading, plan for a pace of about 4 pages/hour. Do not read it like a novel if you hope to learn the material.

Final piece of advice for how to succeed in organic: ATTEND EVERY CLASS! Attendance has been highly correlated with passing the course with a grade of C or higher.

AN ADVISORY NOTE: THE DROP DEADLINE (W OR CHANGE TO P/NC) HAS BEEN CHANGED FROM THE COVID-ERA LAST DAY OF CLASS TO APRIL 13.
WU grades will not be given after April 13 unless you have not done any work or attended class after April 13, and evidently forgot to submit the W request.

REQUIRED ON-LINE PROBLEMS: You are required to purchase access to the Achieve on-line problem web site for this course. The cost includes the textbook as explained above.

The Achieve Link for this course is https://achieve.macmillanlearning.com/courses/ertjmg (same code as above). You can probably find it by searching for Hersh or Queens College or CUNY, but you will be using this constantly.

EACH CHAPTER'S ADAPTIVE QUIZ MUST BE COMPLETED BY THE DEADLINE POSTED, including Chapter 1 for the first class. Most of the time the deadline will be before we start that chapter in class. You must *"achieve"* the target score to get credit. It is 100% or 0%, all or nothing. THE PURPOSE IS TO FORCE YOU TO READ EACH CHAPTER BEFORE IT IS DISCUSSED IN CLASS. There will be no exemptions. As you do the quiz, you have the options to read (or re-read) the relevant part of the text, or for a point penalty, ask for a hint. If you get problems correct, you will move along to the target faster (hence the adaptive part). I believe you will like this part of the Achieve system, and since it is new, feel free to let me know if you find it helpful or not.

After each chapter is done in lecture, you will have an additional homework assignment in Achieve; due dates will mostly be 2-4 days after the chapter is finished in lecture, and on the day we do recitation problems for the chapter in class. There are training modules (with extra credit) that you can complete before you start on the chapter problems.

If you need help contact Macmillan tech support by clicking on the blue ? at the bottom of the Achieve left-hand panel, and select the first option.
MACMILLAN TECH SUPPORT: Students can contact tech support online at
https://macmillan.force.com/macmillanlearning/s/
(this is not an email but probably the same site as the blue ? noted above) or by phone at (800) 936-6899.

While studying organic with other students is recommended, you will get the maximum benefit from these problems by doing them on your own, and ***not*** doing them at the last minute.

Recommended: Molecular model kit (available on-line, about $20-60; the ~$20-30 kits on Amazon look good)

LAB TEXT (Required for Chem 2511): *Macroscale and Microscale Organic Experiments*, Williamson and Masters, 7th ed. Cengage Learning, 2017, ISBN: 978-1-305-57719-0 (hard copy or e-book).
Do NOT get the newer 8th edition.

Grading:	**3 100 minute Midterm Exams**	**60%**
	On-line Achieve Adaptive pre-class Quizzes	**5%**
	On-line Achieve after-lecture homework	**5%**
	Final Exam	**30%**
	Total	**100%**

The midterm exams will be given at the beginning of the class for 1 hour and 40 minutes with no break. The final (2 hour) exam will be similar to the midterm exams.

Exams will stress lecture material and recitation problems.
Bring photo ID to exams.
You will be allowed to bring only to the Midterm Exams (not the Final Exam) an 8.5x11 inch "help" sheet – fill in both sides as you wish. No magnifying glass allowed. They will not be collected.

You ***will*** be permitted to use molecular models during exams. You will ***not*** be permitted to use books, notes (except for the help sheet on the midterms, but ***not*** the final), computers, phones, or calculators during exams. Cell phones and internet watches are strictly prohibited during exams. If you have any questions concerning the grading, contact Dr. Hersh within 10 days following the exam.

There are absolutely no regrades for exams taken in pencil. If you want to have the possibility of a regrade, you must take the exam in pen, and submit the exam for regrade within 10 days.

All re-grade requests must be made in writing and attached to the exam - simply explain what error you think was made in grading; do not *under any circumstances* write anything on the exam itself. **Exams are scanned prior to being returned.**

If you miss a midterm exam, written verification of your reason for missing the exam is required. There are no make-up exams; your midterm grade will be the average of the exams you took.

Cheating of any kind will not be tolerated. If you have a cell phone out during the exam, your exam grade will be zero, and you will be brought up on charges of academic dishonesty to the College.

Approximate Lecture and Examination Schedule

Date	Chp	Topic	Suggested Chapter-End Problems
Jan. 26	1	Bonding and Structure	43-46,48-50, 52-58, 64-65
Feb. 2	2	Alkanes	25, 28-36, 44-45, 54-55
Feb. 11	3	Acids and Bases, Curved Arrows	40-48, 56a, 57, 59-62, 64, 66, 68a
Feb. 23	4	Intro to Alkenes and Alkynes: Structure and Reactivity	43-51, 53-62a, 63-64, 67, 72-77, 79-84
Mar. 2	**Exam 1 Chapters 1-3**		
Mar. 9	5	Addition Reactions of Alkenes and Alkynes	21-33, 35, 36, 39, 40-43
Mar 16	6	Stereochemistry	28-37, 39, 41-43, 45
Mar. 25	7	Cyclic Compounds, Reaction Stereochemistry	32-40, 42-44a, 46, 50, 52-55, 60, 67-70, 76-78, 83
Mar. 30	**Exam 2 Chapters 4 – 6**		
Apr. 15	8	Noncovalent Intermolecular Interactions	31, 32, 36, 39-41, 44, 45, 48, 50, 52, 55, 56, 58
Apr. 20	9	Alkyl Halides, Substitution and Elimination	35-3739-54, 57, 60-65, 70, 71, 77
Apr. 29	10	Free Radicals, Organometallics, Carbenes	35, 36, 39, 41, 42, 44, 47-50, 60, 68
May. 6	**Exam 3 Chapters 7 – 10**		
May 11	11	Alcohols and Thiols	41, 43-52, 57-66, 68-70, 73-76, 80
May 16-26	**Final Exams, most likely 5/18 or 5/20: Chapters 1 – 11.**		

No class Thursday 2/12, Monday 2/16, Tuesday 2/17, Friday 3/20, Wed. – Thurs. 4/1-4/9 (Spring break).
Tuesday 4/21 is a Thursday schedule
The last Tuesday of the semester is during Final Exam week, Tuesday May 19 – if you are in the Tuesday labs, that's when you'll do checkout.

Course Preparation and Advice: Understanding the basic concepts from General Chemistry is critical to understanding reactions and mechanisms in organic chemistry. While these concepts are reviewed in Organic Chemistry, it will be assumed that this is the second time you are seeing this and that you understand the concepts. A brief list from the recent Queens College textbooks for Chem 113 and 114 is given below; if you are transferring in, try match the topics with those in your textbook. Once you start Chem 251, read the book before lecture (yes, I did say this already up above!); take seriously the fact that you really do need to know and understand every reaction we cover in class (no exceptions). Understanding mechanisms will help you remember the reactions. In most cases hiring a tutor will not help and most likely will be a hindrance because you will rely on the tutor rather than yourself.

Review Chapters from Zumdahl & Zumdahl *Chemistry*:
Chem 113
Chapter 4: Types of Chemical Reactions and Solution Stoichiometry

Chapter 8: Bonding: General Concepts
Chapter 9: Covalent Bonding: Orbitals
Chem 114
Chapter 10: Liquids and Solids (Liquids only)
Chapter 14: Acids and Bases
Chapter 17: Spontaneity, Entropy, and Free Energy

or Silberberg *Chemistry*:
Chem 113
Chapter 3: Stoichiometry
Chapter 4: Major Classes of Chemical Reactions
Chapter 6: Thermochemistry
Chapter 9: Models of Chemical Bonding
Chapter 10: Shapes of Molecules
Chapter 11: Theories of Covalent Bonding
Chem 114
Chapter 12: Liquids and Solids (Liquids only)
Chapter 18: Acid – Base Equilibria
Chapter 20: Thermodynamics: Entropy and Free Energy

Course Objectives: Students will learn structural organic chemistry, including bonding, functional groups, stereochemistry, and conformational analysis, as well as the nomenclature for labeling these compounds and structures. In the first semester of organic chemistry a limited number of functional groups, including alkanes, alkenes, alkyl halides, and alcohols, will be introduced along with their reactions. The mechanisms of those reactions and their common mechanistic features will be stressed. Understanding these mechanisms, rather than their rote memorization, is a principal objective, as only understanding of mechanisms will allow new reactions to be understood. Applications of reactions to multistep synthesis will be introduced. At the conclusion of this semester students will almost be prepared to start doing organic research if they so choose, but will need Chapter 14 on NMR (covered in the first month of Chem 252).

Assessment: Problem-solving ability will be tested using exams and on-line graded problems; while memorization of naming and drawing conventions as well as reactions will be required, the emphasis will be on understanding structures of organic compounds and their mechanisms of reaction. While the on-line homework problems will be graded, the intent is to help student learning, rather than provide significant assessment. These and additional sample problems and answers both in the book and on the course web site will be representative of the material that will be found on exams.

GRADE KEY. This course is not graded on a curve. Everyone in the class can get an A, or everyone can get an F. There is no predetermined percentage of the class that will get any particular grade. The key for all exams is shown below, except for + and – cutoffs. For instance, while "A" is shown as 80-100, an average of 80 will be an A-, and while "B" is shown as 65-79, the cutoffs are approximately 1/3 in each range, i.e. around 65-69 B-, 70-74 B, 75-79 B+. The exact ranges will not be given out except for the C cutoff, since you need a C to go on to further chemistry courses.

The ranges given will never be raised, but they have on occasion been lowered if a test was too hard.
80-100 A
65-79 B
55-64 C
50-54 C-
40-49 D
0-39 F

The Queens College Learning Commons (QCLC) will be open for tutoring starting Monday, 2/6/2025 in Kiely Hall, room 131/ 144. QCLC offers free tutoring, workshops, and study resources to support student success across disciplines.
Tutoring Hours:

- Monday from 9am-7pm (In-person and virtual tutoring)
- Tuesday from 9am-5pm (In-person and virtual tutoring)
- Wednesday from 9am-5pm (In-person and virtual tutoring)
- Thursday from 9am-7pm (In-person and virtual tutoring)
- Friday 9am-12pm (Virtual tutoring only)

👉 Make an appointment: https://qclc.mywconline.com/
🌐 Learn more: https://www.qc.cuny.edu/academics/qclc/
✉️ Contact: LCommons@qc.cuny.edu

Queens College of the City University of New York
Department of Chemistry and Biochemistry
Organic Chemistry II
Chem 252.1 Lab Schedule, Remsen Annex 352 Spring 2026

Course Requirements:

Prerequisites for Chem 252.1: C or better in Chem 251.4 and 251.1
Pre or corequisite: Chem 252.4 (C or better if prerequisite)

LAB TEXT: *Macroscale and Microscale Organic Experiments*, Williamson and Masters, 7th ed.
Cengage Learning, 2017, ISBN: 978-1-305-57719-0

Chem 252.1 Section Number: 3
Lab Instructor: J. Eduardo Ocando
Instructor's Email: jocando@qc.cuny.edu
Lab Instructor's Office Hour: Thurs. 5:30PM
Lab coat, safety goggles, and required glassware are provided upon check-in.
Coordinator: Prof. Junyong Choi (junyong.choi@qc.cuny.edu)
[Note: Students should contact their lab instructor for all lab-related questions.]

For the Macroscale and Microscale text book, all experiments to be done are the Macroscale version.

Week	Experiment	Williamson & Masters Chp (Page)
1	Check-in. No laboratory work can be done.	
2	I. Reduction of a ketone with sodium borohydride	55 (670)
3	II. Preparation of the alkyne, diphenylacetylene, from stilbene	58 (687) Exp 2,3
4	III. Diels-Alder reaction	Lab Notes Part 1
5	IV. Aromatic Electrophilic Substitution Preparation of 1,4-tert-butyl-2,5-dimethoxybenzene Use ether for extraction rather than DCM Finish any uncompleted experiments from earlier weeks	29 (409) Exp 4
6	V. Side Chain oxidation. Oxidation of para-nitrotoluene	Lab Notes Part 1
7	VI. Fischer Esterification: Preparation of methyl benzoate	40 (517) Exp 4
8	VII. Nitration of methyl benzoate Start Organic Qualitative Analysis (Identification of "Unknowns") – *see Lab Notes Parts 1 & 2*	28 (404) Lab Notes Part 1 **Lab Notes Part 2***
9	VIII. Preparation of aniline Use ether for extraction rather than DCM Continue Organic Qualitative Analysis as time allows each week	45 (567) Exp 2
10	IXa. Preparation of acetanilide IXb. Aromatic nucleophilic substitution reaction	45 (567) Exp 5 Lab Notes 1
11	X. Aldol condensation. Preparation of dibenzalacetone	37 (487)
12-13	Finish any uncompleted preps AND continue with Organic Qualitative Analysis	

14	Lab Final Exam** & Check out. No laboratory work can be done.	

Lab Notes Part 2*: If you have the *Macroscale and Microscale* textbook, use Lab Notes Part 2 for the Organic Qualitative Analysis explanations and experiments, and use the tables of mp's and bp's, and derivative mp's, in your lab instructor's copy of the Williamson *Organic Experiments* book.

**Lab Final may be given during Finals week.

It is important that you check the Chemistry 252 "Lab Notes Part 1" for details of all experiments, because there are sometimes significant changes from the procedures described in the laboratory manual.

Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit and will be dropped from final average calculation ONLY if your absence is excused by your lab instructor. A second missed lab, if excused by your instructor, will require completion of an alternate assignment given by your instructor in lieu of the lab experiment. Further absences are NOT excusable.

Safety glasses and lab coats are required in the laboratory at all times – even if you already wear glasses.
NO short pants, skirts, or open toe shoes are allowed; tie back long hair.
NO computer, tablet or cell phone use in the laboratory during class activities.
Do not bring food, chewing gum, coats or backpacks into the lab – use the hall lockers.
All experiments are to be done individually – no team experiments.

Course Objectives: Students will continue to learn basic organic lab safety, waste disposal, and techniques, will continue to learn how to keep an organic laboratory notebook, and through the identification of unknowns experiment, start to learn to solve lab problems on their own. At the conclusion of this semester students will be prepared to do organic research if they so choose.

Assessment: You will need to keep a neat, legible laboratory notebook; a lined 100 page, 9 ¾ x 7 ½ inch composition book is best. Your lab instructor will periodically check your notebook, so it must be up-to-date, and will announce when it will be collected for grading. Lab books will not be accepted after the last day of lab class (i.e. Check Out day).
70% - lab book (Report: 35%, Results, 35%).
15% - Performance in the Laboratory (see below).
15% - A written 1 hour lab final given on the last day of lab class (Check Out). The lab final will cover lab safety, and the contents that were covered during the entire semester. It will not cover lecture material. You will need a calculator.

The criteria for Performance in the Laboratory:
1. **Safety:** If you do not work safely, you instructor will deduct points at their discretion. **Eye protection and lab coat must be worn at all times in the lab**; penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day's lab with no possibility of make-up [Points will be deducted from your final grade for safety offenses at instructor's discretion]. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt, ask! Points will be deducted for unsafe practices or violations of waste protocols; You may be ejected from lab and receive a zero (0) for that day's work.
2. **Independence**: Your ability to work and think independently, as determined by your instructor.

3. **Efficiency and Effectiveness**: Your ability to efficiently accomplish the goals of the experiment within the lab time frame. This also includes the quality of your results.

Department of Chemistry and Biochemistry
Queens College CUNY

Basic Biochemistry Laboratory [CHEM 1031]
Syllabus for Spring 2026

I. KEY INFORMATION

Instructor:	Prof. Aida Abbasiazam	Email: Aida.Abbasiazam@qc.cuny.edu
Course coordinator:	Dr. Eleonora Gianti	Email: Eleonora.Gianti@qc.cuny.edu
Location:	Remsen 218B	
Laboratory section:	CHEM103.1/2 (Thursday 1:40-4:30)	
Office Hour:	By appointment via email (Office: RE206)	

Please direct **all** e-mails regarding the lab course to the Lab Instructor. If your question(s) require input from the Course Coordinator, your instructor will contact the course coordinator via e-mail and 'cc you on the e-mail.

II. REQUIRED COURSE MATERIAL

Lab manual to be purchased from the Queens College online bookstore: ***Introduction to Biochemistry Chemistry 103.1, 5th edition, August 2018*** **by Wilma Saffran and Olga Binyaminov**

To find the lab manual, please search 'QC online bookstore' on Google and click on the first search result. Type *'Basic Biochemistry lab'* into the search bar that is at the top right of the webpage. This will bring up a dropdown menu of all the sections of 103 lab; click on the one that has your instructor's name attached to it. This will bring you to the page where you can purchase the lab manual.

III. GRADING

Attendance is mandatory. A missed lab will receive no credit. Students must report to lab on time. There is NO make-up for any missed laboratory experiment. A lab can only be excused with documentation relating to an unplanned emergency (medical or legal) or religious observance.

Your final score will be determined using the formula:

1. Pre-lab questions (10%)

Each pre-lab assignment must be completed and submitted on Brightspace prior to the beginning of the class. In addition, you are expected to be familiar with the general topic of the lab that is going to be discussed.

2. Lab Report (65%)

Each lab report must be submitted both on Brightspace and a physical copy the week following the completion of the lab exercise.

3. In-Person Final exam (20%)

The final exam will be **cumulative** (covering **all** labs) and will be given during the last class meeting day as indicated in the lab schedule that can be found at the end of this syllabus. The exam will be a maximum of 2 hours long and will be given in-person. Question types will include (but are not limited to): fill-ins, short responses, mini-essays, and calculations. **There are no make-ups for the FINAL EXAM. If you miss the Final Exam for the lab, you will be given a grade of zero (0) for the test and your grade will be calculated according to the grading formula.**

4. Participation (5%)

You are required to come **on time** to the lab prepared with your lab manual and appropriate PPE. Participation will also be based on how efficiently and cleanly you work throughout the lab exercise)

Arrival at the lab later than 10 minutes will result in your exclusion from the lab on that day. Please make sure that you attend all in-person labs and that you complete all the coursework that is assigned work by the deadlines that are set in place. **No extensions** for assignments will be given. An INC grade will not be given to a student to avoid an F or WU grade.

Grade Scale

The **Official Queens College Grade Scale** will be used to determine your final letter grade. (Any updates in the Official Queens College Grade Scale will be implemented.)

The Official Queens College Grade Scale can be found at the link below:

https://www.qc.cuny.edu/aac/academic-and-grading-policies/

IV. ATTENDANCE AND WITHDRAWL POLICIES

This is a laboratory class with a limited capacity in the classroom. As a result, there are NO make-up options (Excused or Unexcused) for any missed lab. YOU ARE EXPECTED TO ATTEND ALL LAB SESSIONS. If you miss a lab class due to QC approved religious reasons OR due to emergencies, inform instructor and make sure it is excused. A valid documentation for the excused absence will be required. If a doctor's note, it must be on the doctor's letterhead and signed by a physician with a different last name from the student, and a statement that the physician is not a relative of the student.

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Basic Biochemistry Laboratory [CHEM 1031]
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Unexcused absences are given a zero and included in the calculation of final lab score.

In case of absence(s), the following policy will be adopted:

1st Excused Absence: The missed lab will be excluded from calculating your overall lab score.

2nd Excused Absence: A quiz will be given for the missed lab OR the final lab exam score will be used to replace the missed lab score.

Any further absences will result in a zero grade for the lab irrespective of the reasons. If you are absent for 4 or more lab periods, you will NOT be allowed to take the lab final and expected to withdraw from the course. If you are not withdrawn by the deadline, you will be issued a WU grade.

INC grade: There is no INC grade for this course. If your grade is suffering due to absences in the lab, you are expected to withdraw on time and re-enroll for the next semester. The instructor will not give advice on rules, deadlines and financial aid consequences of any letter grade.

W and WU Grade policy – THE DROP DEADLINE (W OR CHANGE TO P/NC) HAS BEEN CHANGED FROM THE COVID-ERA LAST DAY OF CLASS TO April 13, 2026. Students who do not officially withdraw by April 13 (and receive a W grade) but stop attending classes and do not participate in any way after the withdrawal date will be given a WU grade. Any participation in class (i.e., lab work, homework, taking quizzes and exams) after the withdrawal date will disqualify you from receiving the WU grade, and you will be given the appropriate letter grade.

All laboratory experiments are to be performed individually (and evaluated by the instructor). There are NO team experiments. Each person registered for lab is to perform each laboratory experiment individually.

V. GENERAL LABORATORY RULES

Failure to adhere to safety guidelines may result in your removal from the lab and an automatic failure for that experiment. Always listen carefully to your lab instructor for safety precautions and procedure modifications. If an accident occurs, notify your lab instructor immediately.

a. Always wear safety goggles.

b. NO short pants, skirts, open toe shoes are allowed; tie back long hair; secure all loose clothing.

c. NO food, beverages, gum, horseplay, or unauthorized experiments allowed.

d. NO computer, tablet or cell phone use in the laboratory during class activities.

e. Never leave a flame unattended.

f. All chemical waste must be disposed of properly. Your instructor will provide you with specific instruction at the beginning of each lab regarding how to handle the chemical waste for that experiment.

VI. OTHER COURSE-RELATED INFORMATION

a) The prerequisites for this course are a grade of C or better in Chemistry 102.3 and a grade of C or better in 102.1. The corequisite for this course is Chemistry 103.3.
b) This laboratory course will introduce students to common laboratory techniques that are implemented to examine the properties of macromolecules and metabolic reactions. Students will perform titrations, and colorimetric, chromatographic, and enzymatic assays to learn about vitamins, proteins, phospholipids, and sugars.
c) This course provides students with an introduction to a variety of laboratory techniques that are commonly used to isolate, quantify, and characterize biomolecules. Upon completing this course, students:
    a. should be familiar with laboratory techniques such as spectrophotometry, chromatography, extraction, and titration
    b. should understand how to interpret and analyze data collected from colorimetric, chromatographic, enzymatic, and titration assays
    c. should understand basic characteristics of proteins, sugars, lipids, and vitamins

VII. OTHER POLICIES AND ACCOMMODATIONS

a) CUNY **POLICY ON ACADEMIC INTEGRITY**

Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/.

Please read this document, paying careful attention to the sections on plagiarism and Internet plagiarism. If you are not sure how to cite work you have found on the internet, please review the APA Guidelines provided by the Purdue OWL.

b) **REASONABLE ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

Candidates with disabilities needing academic accommodation should: 1) register with and provide documentation to the Special Services Office, Frese Hall, Room 111; 2) bring a letter indicating the need for accommodation and what type. **This should be done during the first week of class.** For more information about services available to Queens College candidates, visit the website, or contact: Special Service Office; Director, Miriam Detres-Hickey, Frese Hall, Room 111; 718-997-5870 (Monday – Thursday 8:00 a.m. to 5:00 p.m. & Friday 8:00 a.m. to 4 pm.).

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c) **QUEENS COLLEGE CLASSROOM PHOTOGRAPHY AND RECORDING POLICY**

Neither photographs nor recordings (audio or video) of all or parts of classes at Queens College may be made without written permission from the course instructor(s).

The Office of Student Affairs and the Office of Special Services may provide for the recording of classes on behalf of a student receiving disability accommodations, missing class due to religious beliefs, or experiencing extended absence due to medical or other exigent circumstances.

The Queens College Classroom Photography and Recording Policy applies to both students and visitors. Students and visitors are not authorized to copy, download, or disseminate authorized recordings and photographs to others. Students in violation of this policy are subject to disciplinary action, and visitors in violation of this policy are subject to removal from the classroom and/or campus.

-- See the next page for a list of experiments that will be conducted.

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Basic Biochemistry Laboratory [CHEM 1031]
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VII. LABORATORY EXERCISES – Thursday Section

WEEK#	DATE	EXPERIMENT	MANUAL (pages)
1	1/29/26	Check-in; Safety Video, Beer's Law	12
2	2/5/26	Spectrophotometry	10 - 23
3	2/19/26	Extraction of Vegetable Carotene	24 - 29
4	2/26/26	Size Exclusion Chromatography	30 - 41
5	3/5/26	Analysis of Phospholipids by TLC	42 - 51
6	3/12/26	Enzyme Kinetics – Part I (Enzyme conc.)	52 - 59
7	3/19/26	Enzyme Kinetics – Part II (Substrate conc.)	60 - 64
8	3/26/26	Enzyme Kinetics – Part III (Enzyme spec/temp)	65 - 67
9	4/16/26	Cellular Respiration	114 - 121
10	4/21/26	Acid-base Properties of Amino Acids	92 - 103
11	4/23/26	Protein assay by Biuret Reaction/Dye-binding	82 - 91
12	4/30/26	Vitamin C Content in Juice	104 - 113
13	5/7/26	Determination of Carbohydrates.	122 – 131
14	5/14/26	Check-out and Evaluation Day	
15	Date TBD	Final Exam (Cumulative)	

*** Please note that *April 21, 2026* is a Tuesday following *Thursday* schedule.**

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1131- General Chemistry I Laboratory (Fall 2025) Syllabus

Course Section and Code #: 10 (38625), Fri 9: 15 am – 12:05 pm, Rem. 156

Instructor's Full Name: Aida Abbasiazam

Instructor's Email: Aida.Abbasiazam@qc.cuny.edu

Instructor's Office Hour: By appointment via email.

Textbook for the course: No charge to students and it is posted on Brightspace.

Other required items: A lab notebook with carbonless copy pages (Available on Amazon) is required for collecting your experimental data. In addition, a basic scientific calculator is required and can be purchased anywhere. Note that lab coat, safety goggles, and required glassware are provided upon check-in.

Pre-Requisite/Co-Requisite: CHEM 1134

Coordinator: Dr. Sheila Sanders (sheila.sanders@qc.cuny.edu)

[Note: Students should contact their lab instructor for all lab-related questions.]

I. Laboratory Course Format: In-person

A. ALL In-person lab sessions will be held on Queens College campus in Remsen at your scheduled time and day. Lateness by more than 10 min. is counted as an unexcused absence and you must leave the lab room.

B. Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit and will be dropped from the final average calculation ONLY if your absence is excused by providing acceptable documentation to the lab instructor. Students who miss more than two experiments (excused or not) must drop the course. Wtritten documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles and lab coat.

B. NO short pants; skirts if worn must extend to the ankle; open toe shoes are NOT

allowed; tie back long hair.

C. NO food, beverages, gum, horseplay, or unauthorized experiments allowed.

D. NO computer, tablet or cell phone use in the laboratory during class activities.

III. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on Brightspace. You **must bring a printed** copy of the experiment write-up to the lab in order to complete the experiment. You will not be allowed to use electronic devices.

IV. Prelab Preparation AND Lab Reports

A. Prelab preparation is required for each experiment BEFORE you come to the lab. This includes reading the full experiment from start to finish in the lab manual and watching posted videos (if posted) on Brightspace. **The Prelab write-up should include section**

IV C (1-4)*, listed below and must be initialed by the instructor before the lab experiment begins. You should review the safety protocols for each experiment. **You should complete the prelab questions posted on Brightspace before each experiment.**

B A completed typed LAB REPORT as per specified format is ALSO required for EACH experiment. **Lab reports must be uploaded to Brightspace by the end of the day of the subsequent lab session**. Late lab reports are strongly discouraged. They will receive a severe reduction in points (see section V(B)).

C. **Format of Lab Report (*Reflect Items that should be completed in the lab notebook before each lab, i.e., the Prelab write-up).**

*1. **Title/Cover page:** Include your name, section number, experiment title, AND date of the experiment. Experiment title can be copied from the syllabus or lab book.

*2. **Abstract:** A brief summary of the experimental results and their meaning.

*3. **Introduction**: Explain concisely the chemistry of the experiment in your own words. Include any equations and other scientific and mathematical explanations; i.e., the theory.

*4. **Experimental Procedure:** A concise but complete summary of the steps, materials, and apparatus of the experiment.

5. **Data:** Include your original data, signed by the instructor; i.e., the “carbon copy” of measurements or observations you directly recorded during the experiment.

6. **Calculations and Results:** Show all work; If there is a repetitive calculation, you need to show the equation and its use only once; Include any tables, graphs or diagrams that may be required.

7. **Conclusions:** Summarize your final conclusions in this section.

8. **Discussion:** State whether results were good or bad, and reasons why, what may have affected them, and any potential problems with the experiment. Be brief but complete. There may be questions you must answer, based on the lab manual. Work them into your discussion. If you know your expected value from instructor or from reference sources, be sure to list the percent error and discuss experimental errors that can account for it.

9. **References:** Include the lab experiment write-up and other references, including those from the internet.

Finally, Lab Reports do not have to be excessively long, but they do have to cover all the important ideas of the experiment.

V. Grading: (Part A) Each lab is graded for 100 points distributed as follows - 10% Prelab Questions; 10% Prelab write-up in lab notebook; 60% Lab Report; 20% Performance in the Laboratory. Part A will be weighted 85% of your lab grade.

(Part B) A written comprehensive lab final will be administered during finals week. Check cunyfirst for the date. This part will be weighted 15% of final lab grade. The lab final will cover lab safety, and the contents that were covered during the entire semester.

Further,

A. Prelab will not be accepted after the lab session is over. If material for completing prelab questions has not been covered in the lecture, utilize the office hours of the lab instructor to get help with prelab activity. No excuses will be accepted.

B. ALL lab reports are due by the end of the day on the subsequent lab session. LATE reports are strongly discouraged, and they will receive a penalty as follows - 10% reduction with each delayed week; Lab reports will NOT be accepted after two weeks or the last lab class (i.e., Check Out Day).

C. Reports will be graded for conformance to the above-described format and checked for plagiarism. Introduction, discussion, and conclusions are expected to be your original sentences.

D. If you have attended all the labs without any excused absences, your instructor will drop one of the lowest grades when calculating the lab average.

The criteria for Performance in The Laboratory Experiments are as follows:

1. **Safety:** If you do not work safely, you instructor will deduct points at their discretion. **Eye protection and lab coat must be worn at all times in the lab**; penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day's lab with no possibility of make-up [Points will be deducted from your final grade for safety offenses at instructor's discretion]. You should also cover your nose and mouth by wearing a mask during your in-person labs. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt, ask! Points will be deducted for unsafe practices or violations of waste protocols; You may be ejected from lab and receive a zero (0) for that day's work.

2. **Independence**: Your ability to work and think independently, as determined by your instructor.

3. **Efficiency and Effectiveness**: Your ability to efficiently accomplish the goals of the experiment within the lab time frame. This also includes the quality of your results.

There will be no extra credit provided at the end of the semester. An INC grade will not be given to a student to avoid an F or WU grade. The W and P/NC deadline is M 4/13.

VI. Other Important Information

(i) If you drop the course, you must notify your lecture instructor in order to stay in the lecture. You must check-out ASAP! Otherwise, you do so at the normal time on the final check-out day. If you do not check-out, you will be charged a fine as listed in the stockroom.

(ii) On the check-in day, a combination lock will be issued to you.

(iii) You must have an approved laboratory notebook with carbonless copy pages (for example, ISBN 978-1-930882-74-4 or 978-1-617319-14-3; there are other acceptable ones), and use it to collect and document your data. You can check the availability at QC online bookstore. Do NOT take any notes on scrap paper.

(iv) **Code of Conduct**

A. Plagiarism- Plagiarism or any other forms of cheating is NOT tolerated and will be severely punished by point, other penalties, and/or referral to the Chairman and the Dean; Any assignment involved will receive a grade of zero. Failure to appropriately cite a source of information may also be considered plagiarism.

B. Inappropriate Behavior, e.g., horseplay or off-color language, oral or written, will NOT be tolerated and may lead to expulsion from class and a grade of zero.

(v) Available accommodation for students with learning disabilities: Students with disabilities needing academic accommodation should register with the Special Services Office by emailing QC.SPSV@qc.cuny.edu. For more information about services available to Queens College students, visit the Office of Special Services website:

https://www.qc.cuny.edu/sp/

(vi) Counseling Services are also available to any Queens College student. This office assists students with personal concerns that can affect their enjoyment of and success in college. Services are free and confidential. All sessions take place on Zoom or by Telephone, depending on student preference. To make an appointment, students should call 718-997-5420 and leave a message with their phone number and CUNY ID. They may also e-mail counselingservices@qc.cuny.edu

(vii) CUNY Policy on Academic Integrity: Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at

https://www.cuny.edu/about/administration/offices/legal-affairs/policies-resources/academic-integrity-policy/

Schedule of Experiments

Week 1 IN PERSON Check In, Safety Review, Discuss Syllabus, Take Safety Quiz.

A score of 80% or above on the lab safety quiz is required before working in the lab.

Safety Video Links: https://www.youtube.com/watch?v=9o77QEeM-68

https://www.youtube.com/watch?v=gi3DeFY0cfw

1/30 Week 2 Exp. 1 Density

2/6 Week 3 Exp. 2 Hydrate

2/13 Week 4 Exp. 3 Precipitation

2/20 Week 5 Exp. 4 Iron-Copper (II) Sulfate Redox

2/27 Week 6 Exp. 5 Qualitative Study of Redox

3/6 Week 7 Exp. 6 Copper Cycle

3/13 Week 8 Exp. 7 Molar Mass of a Metal

3/27 Week 9 Exp. 8 Solutions

4/10 Week 10 Exp. 9 KHP Titration

4/17 Week 11 Exp. 10 FAS Titration

4/24 Week 12 Exp. 11 Calorimetry I and II

5/1 Week 13 Exp. 12 Heat of Neutralization

5/8 Week 14 Checkout

5/15 Week 15 Lab Final Quiz

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (SPRING 2026)

Section Number: 2 (38523)

Instructor's Full Name: Dr. Jim Dimitrakopoulos

Instructor's Email: jim.dimitrakopoulos@qc.cuny.edu

Instructor's Office Hour: Tuesday 4:00 – 5:00 PM (Location: Chemistry Office Remsen 206)

Laboratory Manual: posted on Brightspace.

Other required items: A lab notebook with carbonless copy pages is required for collecting your experimental data. In addition, a scientific or graphing calculator is required and can be purchased anywhere. Note that lab coats, safety goggles, and required glassware are provided upon check-in.

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Chen Wang (chen.wang@qc.cuny.edu)

[Note: Students should contact their lab instructor for all lab-related questions.]

I. Laboratory Course Format- In-person

A. ALL In-person lab sessions will be held on the Queens College campus in Remsen 153 at your scheduled time and day. Lateness by more than 15 min. is counted as an absence.
B. Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit and will be dropped from the final average calculation ONLY if your absence is excused by your lab instructor.

This is a laboratory class with a limited capacity in the classroom. As a result, there are NO make-up options (Excused or Unexcused) for any missed lab. YOU ARE EXPECTED TO ATTEND ALL LAB SESSIONS. If you miss a lab class due to QC-approved religious reasons OR due to emergencies, inform the instructor and make sure it is excused. A valid documentation for the excused absence will be required.

In case of absence(s), the following policy will be adopted:

1st Excused Absence: The missed lab will be excluded from calculating your overall lab score.
2nd Excused Absence: A quiz may be given for the missed lab, OR the Final Exam score will be used to replace the missed lab score. Any further absences will result in a grade penalty, irrespective of the reasons (excused or unexcused).
3rd Absence: You will receive a ZERO for the lab. [Note: If your 3rd absence is ALSO an excusable absence, you may be eligible for the 'INC' grade. See instructions below for INC grade]
4th Absence: If you were absent for the 4th regular lab session, you will NOT be allowed to take the lab final. You should withdraw on time or be issued WU.

IMPORTANT: For students who have attended ALL labs, their lowest lab scores may be dropped when calculating their letter grades. All unexcused absences are given a zero and will be included in calculating the average lab score.

W grade: Automatic Withdrawal with W: The deadline is November 6th. If you are not passing the course by this deadline, you will have to make a choice between staying in the course for whatever letter grade you get OR apply for W to avoid a hit to GPA. A failing student will not be eligible to apply for retroactive withdrawal or INC grade request later in the course.

INC grade: INC grade is applicable only if the student is passing the course already and may have to make up NO more than one lab due to 3rd excused absence. Students need to request instructors for this option, and the terms for resolving the INC grade must be clearly communicated and approved by the course coordinator.

Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.
B. NO short pants, skirts, or open-toe shoes are allowed; tie back long hair.
C. NO food, beverages, gum, horseplay, or unauthorized experiments allowed.
D. NO computer, tablet, or cell phone use in the Laboratory during class activities unless the instructor permits the use of these devices for course-related purposes

III. Laboratory Manual

A custom laboratory manual is used and available free of charge. It is posted on Brightspace in the Content Section. You **must bring a printed** copy of the experiment write-up to the lab. You will not be allowed to use electronic devices.

IV. Prelab Preparation AND Lab Reports

A. Prelab preparation is required for each experiment BEFORE you come to the lab. This includes reading the full experiment from start to finish in the lab manual and watching posted videos (if posted) on the Brightspace. **The Prelab write-up should include section IV C (1-4)*, listed below, and must be initialed by the instructor.** You should review the safety protocols for each experiment. **You should also complete the prelab questions posted in the Assignment section of Brightspace before each experiment.**

B. A completed **typed LAB REPORT** as per the specified format is ALSO required for EACH experiment. **Lab reports must be uploaded to Brightspace by the end of the day of the subsequent lab session.** Late lab reports are strongly discouraged. They will receive a severe reduction in points (see section V(B)).

C. **Format of Lab Report (*Reflect Items that should be completed in the lab notebook before each lab, i.e., the Prelab write-up).**

1. ***Title/Cover page:** Include your name, section number, experiment title, AND date of the experiment. Experiment titles can be copied from the syllabus or lab book.
2. ***Objective:** It should clearly specify the aim of that day's experiment. It most often starts with "To find", "To measure", etc. Example: "To determine the heat energy released by the neutralization reaction of hydrochloric acid and sodium hydroxide."
3. ***Introduction**: Explain concisely the chemistry of the experiment in your own words. Include any equations and other scientific and mathematical explanations, i.e., the theory.
4. ***Experimental Procedure:** A concise but complete summary of the steps, materials, and apparatus of the experiment.
5. **Data:** Include your original data, signed by the instructors, i.e., the "carbon copy" of measurements or observations you directly recorded during the experiment.
6. **Calculations and Results:** Show all work. If there is a repetitive calculation, you need to show the equation and its use only once. Include any graphs or diagrams that may be required.
7. **Conclusion:** Summarize your final conclusions in this section.
8. **Discussion:** State whether the results were good or bad, and reasons why, what may have affected them, and any potential problems with the experiment. Be brief but complete. There may be questions you must answer based on the lab manual. Work them into your discussion. If you know your expected value from the instructor or from reference sources, be sure to list the percentage error and precision and discuss experimental errors that can account for them.
9. **References:** Include the lab experiment write-up and other references, including those from the internet.

Finally, Lab Reports do not have to be excessively long, but they do have to cover all the important ideas of the experiment.

V. Grading:

A. Each lab is graded for 100 points distributed as follows - 10% Prelab Questions (Posted in Brightspace); 10% Prelab write-up (Handwritten in lab notebook); 60% Lab Report (Uploaded to Brightspace); 20% Performance in the Laboratory. Part A will be weighed 85% of your lab grade.
B. A written comprehensive lab final will be administered during finals week. Check cunyfirst for the date. This part will be weighted 15% of the final lab grade. The lab final will cover lab safety and the contents that were covered during the entire semester.

Further,

A. Prelab will not be accepted after the lab session is over. If the material for completing prelab questions has not been covered in the lecture, utilize the office hours of the lab instructor to get help with prelab activity. No excuses will be accepted.
B. ALL lab reports are due by the end of the day of the subsequent lab session. LATE reports are strongly discouraged, and they will receive a penalty as follows - 10% reduction with each delayed week. Lab reports will NOT be accepted after two weeks or the last lab class (i.e., Check Out Day).
C. Reports will be graded for conformance to the above-described format and checked for plagiarism. The introduction, discussion, and conclusions are expected to be in your original sentences.
D. If you have attended all the labs without any excused absences, your instructor will drop one of the lowest grades when calculating the lab average.

The criteria for Performance in The Laboratory Experiments are as follows:

1. **Safety**: If you do not work safely, your instructor will deduct points at their discretion. **Eye protection and a lab coat must be worn at all times in the lab**; the penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day's lab with no possibility of make-up [Points will be deducted from your final grade for safety offenses at instructor's discretion]. You should also cover your nose and mouth by wearing a mask during your in-person labs. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt, ask! Points will be deducted for unsafe practices or violations of waste protocols. You may be ejected from the lab and receive a zero (0) for that day's work.
2. **Independence**: Your ability to work and think independently, as determined by your instructor.
3. **Efficiency and Effectiveness**: Your ability to efficiently accomplish the goals of the experiment within the lab time frame. This also includes the quality of your results.

No extra credit will be provided at the end of the semester. An INC grade will not be given to a student to avoid an F or WU grade.

VI. Other Important Information

1) If you drop the course, you must check out ASAP! Otherwise, you do so at the normal time on the final check-out day. If you do not check out, you will be charged a fine as listed in the stockroom.
2) On check-in day, you will receive a combination lock.
3) You must have an approved laboratory notebook with carbonless copy pages (for example, ISBN 978-1-930882-74-4 or 978-1-617319-14-3; there are other acceptable ones), and use it to collect and document your data. You can check the availability at the QC online bookstore. Do NOT take any notes on scrap paper.
4) **Code of Conduct**
    A. Plagiarism- Plagiarism or any other forms of cheating are NOT tolerated and will be severely punished by points, other penalties, and/or referral to the Chairman and the Dean. Any assignment involved will receive a grade of zero. Failure to appropriately cite a source of information may also be considered plagiarism.
    B. Inappropriate Behavior, e.g., horseplay or off-color language, oral or written, will NOT be tolerated and may lead to expulsion from class and a grade of zero.
5) Available accommodation for students with learning disabilities: Students with disabilities needing academic accommodation should register with the Special Services Office by emailing QC.SPSV@qc.cuny.edu. For more information about services available to Queens College students, visit the Office of Special Services website: https://www.qc.cuny.edu/sp/.
6) Counseling Services are also available to any Queens College student. This office assists students with personal concerns that can affect their enjoyment of and success in college. Services are free and confidential. All sessions take place on Zoom or by Telephone, depending on student preference. To make an appointment, students should call 718-997-5420 and leave a message with their phone number and CUNY ID. They may also email counselingservices@qc.cuny.edu
7) CUNY Policy on Academic Integrity: Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/.

Schedule of Experiments

SPRING 2026

Week 1 (1/27) IN PERSON Check In, Safety Review, Discuss Syllabus. [Homework: Exploring Boiling Points; Prepare and Take Safety Quiz]

Safety Video Links: https://www.youtube.com/watch?v=9o77QEeM-68

https://www.youtube.com/watch?v=gi3DeFY0cfw

Week 2 (2/3) Iron Content of a Tablet by Redox Titration

Week 3 (2/10) Beer's Law

Week 4 (2/17) Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy

Week 5 (2/24) The van't Hoff i Factor and Osmosis

Week 6 (3/3) Kinetics

Week 7 (3/10) Equilibrium - Part I: Le Châtelier's Principle

Week 8 (3/17) Equilibrium - Part II: Measuring an Equilibrium Constant and

Preparation and Analysis of a Complex Ion Compound – Part I

Week 9 (3/24) Preparation and Analysis of a Complex Ion Compound - Finish

Week 10 (3/31) Acids, Bases, Buffers and Salts

Week 11 (4/14) Identifying an Acidic Salt by Titration

Week 12 (4/21) Qualitative Analysis of Cations: Do It Yourself

Week 13 (4/28) Electrochemistry

Week 14 (5/5) Review for Lab Final Quiz and Check Out

Week 15 (5/26) Lab Final Quiz

Queens College, CUNY Department of Chemistry and Biochemistry
Professor Edward G. Look; Coordinator Sheila Sanders **Spring 2026**

CHEM 113.1- General Chemistry I Laboratory

Section **4**- **Tuesdays** 9:15 AM – 12:05 PM, 156 RE

Laboratory Syllabus

I. General Laboratory Rules

A. **Pre- or Corequisite course-** Chem 113.4
B. **Always** wear safety goggles and contact lenses **not** allowed.
C. No short pants, skirts, nor open toe shoes are allowed, and tie back long hair.
D. **NO** food, beverages, gum, horseplay, ***nor*** stunt experiments allowed.
E. No coats, jackets, bags, or backpacks are allowed in lab; use the hallway lockers.
F. No computer nor tablet nor cell phone use in the laboratory during class activities.
G. Therefore, you ***MUST* PRINT OUT** EACH DAY'S PROCEDURES for use in lab.
H. Clean up your area after each lab session.

II. Laboratory Manual: posted on Brightspace

III. Laboratory Reports

A. A report is required for ***EACH*** experiment.
B. Lab reports are always due **next lab session**, for any lab. All lab reports will be uploaded to Brightspace. **Late reports are strongly discouraged**, and they will receive a severe reduction in points, as determined by your instructor.
C. **Format:**
   1. ***Heading:*** Always be sure ***your name, section number, experiment title AND date the experiment was performed*** is included- **DO *NOT use* a cover or title page**.
   2. ***Objective:*** Clearly specify the aim for that day's experiment. It often starts with "To find", "To measure", *etc.*, *e.g.*, "To determine the heat energy released by the neutralization reaction of hydrochloric acid and sodium hydroxide."
   3 ***Introduction:*** Explain *concisely* the chemistry of the experiment, including any equations and other scientific and mathematical explanations; *i.e.*, the **theory**. No fluff, please.
   4. ***Experimental:*** A **concise** but complete summary of the steps, materials, and apparatus of the experiment.
   5. ***Data:*** Include your *original data*; *i.e.*, the "carbon copy" of measurements or observations you directly recorded during the experiment, signed by the instructor stapled to back of report. However, rewritten data *are to be included in the Data section of the report*.
   6. ***Calculations and Results:*** Show all work; but if there is a repetitive calculation, you need only show the equation and its use only once; after that, just list the answer. Include here also any **graphs** or **diagrams** that may be required.
   7. ***Discussion:*** State whether results were good or bad, and reasons why, what may have affected them, and any problems with the experiment. Be brief but complete. There may be questions you must answer, or blanks from the manual to fill; work them into your discussion.
   8. ***Conclusion:*** Summarize your final conclusions in your discussion section along with your results and very basically what you did. (The discussion section is where you actually draw your important conclusions.)
   9. ***References:*** Include the lab experiment write-up and other references, including those from the internet.
D. Reports will be graded for conformance to the above-described format and checked for plagiarism. *Introduction*, *results & discussion*, and *conclusions* are expected to be in your own words.

IV. Grading

A. **Each report** is graded on 100 points, distributed as follows: *Heading and Objective*, 12 points; *Introduction*, 18 pts.; *Experimental*, 18 pts.; *Data*, 9 pts.; *Calculations and Results*, 15 pts.; *Discussion*, 15 pts.; *Conclusion*, 8 pts.; and *References*, 5 pts. Each is due one week after that lab ends. Reports *cannot* be accepted *more than 7* days after the experiment. These are 70% of your lab course grade.

B. **Prelabs**- There are two kinds:
   1. First you must take quizzes on Brightspace *before* you come to lab, due 11:59 the night before and cover that day's experiment; if material wasn't covered in lecture, ask me for help.
   2. Next, write the theory and procedure for the day's lab in your notebook before class. *Suggestion:* write a full report Introduction and Experimental (more than suffices; then copy to your report). These two prelabs are *each* 10% of your lab course grade.

C. A written comprehensive lab final will be administered during the last lab day. This is 20% of the lab course grade. The lab final will cover lab safety, and contents covered during the entire semester.

D. Apportionment of course points is also to be determined by me, including lab performance points:
   1. safety- if you do not work safely, you instructor will deduct points at his discretion
   2. independence- your ability to work and think independently, as determined by your instructor
   3. efficiency- your ability to correctly and quickly accomplish the experiment
   4. effectiveness- and of course, how well the results turned out

E. If you attend all labs, the lowest report score may be dropped in figuring your course grade. All unexcused absences receive zero (0) and included in your final course grade.

F. Grades for Special Circumstances
   1. **W grade:** Automatic withdrawal with W- if you are not passing by April 1, you will have to make a choice between staying in the course for whatever letter grade you will get ***or*** apply for W to avoid lowering GPA. A failing student will not be eligible to apply for retroactive withdrawal or **INC grade** (*see below*) request later in the course.
   2. **INC grade:** INC grade is applicable only if the student is passing the course already and has to make up NO more than one lab due to a third excused absence. Students need to request instructors for this option, and the terms for resolving the INC grade must be clearly communicated and approved by the course coordinator.

V. Laboratory Requirements:

A. **Eye protection must** be worn at all times in the lab; penalty for failure to do so is **dismissal** from that day's lab and/or 0 (zero) points for the day.

B. *If you drop the course, you **must** check-out ASAP!* Otherwise, you do so at the normal time on the final check-out day. If you do not check-out you will be charged a fine as listed in the Stockroom.

C. You must watch the lab safety video during the first lab. If you missed it, you must watch it yourself online; the link is available on Brightspace and necessary for the safety quiz.

D. You **must** have safety goggles, a lab coat and a combination lock; ***we** will issue these to you*. Your belongings must be stowed in the lockers outside the lab.

E. **You must have an approved laboratory notebook with carbonless copy pages (*e.g.*, ISBN 978-1-533969-52-1; there are others acceptable ones), do not take any notes on scrap paper or other things. It is available through the QC online bookstore. Write in it *first*; no copying *into* it allowed.**

F. You will need a scientific calculator. Maybe a USB flash drive or SD card could prove handy.

G. You will read the day's experiment *before* coming to lab, and bring a copy with you.

VI. Safety:

First, you must sign and submit the safety contract. Wear long pants or skirts, closed toe shoes, and long hair tied back are required. Eating, drinking, gum chewing, horseplay, stunt experiments, and contact lenses are not allowed, wear glasses to lab instead. Safety shower, fire extinguisher, and eyewash locations must be noted. Chemical waste handling protocols must be observed; if in doubt ***ask!*** **Points will be deducted for unsafe practices or violations of waste protocols, and you may be ejected from lab and receive a *zero* (0) for that day's work.** Again, you must watch the safety video before any work starts, regardless of whether you have seen it before. If you miss it, arrange a session ASAP. Additionally, 5 points will be assessed against your grade for:

1. eye protection violation (§I. B)
2. improper disposal of any chemicals (*i.e.*, not disposed into designated waste containers)
3. food or drink (candy, gum, even drinking water included) brought into lab
4. coats, jackets, bags, backpacks, *etc.*, brought into lab- **use the lockers in the hallway**
5. not cleaning your station after you are done for the day

VII. Code of Conduct

A. **Plagiarism-** Plagiarism or any other form of cheating is not tolerated and will be severely punished by point and other penalties and/or referral to the Chairman and the Dean; any assignment involved will receive a grade of zero (0). Failure to properly cite a source may also be considered plagiarism.

B. **CUNY Policy on Academic Integrity:** Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: CUNY Legal Affairs Academic Integrity Policy.

C. **Inappropriate behavior**, *e.g.*, horseplay or off-color language, oral or written, will not be tolerated and may lead to expulsion from class and a zero if during an examination or assignment.

D. **If You Are Sick:**
If you even just believe you may have COVID-19 or RSV or the flu, ***please stay home and do not come to campus***, e-mail me, and we can work with you with respect to the course material.

E. **Attendance**

1. Attendance is required. There is NO make-up for any missed laboratory experiment. A missed lab will receive no credit. If you are absent, then you cannot submit a lab report for that day.
2. Lateness by ***more than* 15 min.** is counted as an absence.
3. If you must miss for religious or emergency reasons, be sure to inform me to be excused. Valid documentation is required to be excused.
4. The first excused lab is dropped from calculation of your lab score. A second excused lab may either be replaced by a quiz or by your lab final exam score. A third absence receives a zero (0) for that lab. A fourth absence will prevent you from taking the lab final exam; if you have four absences, either withdraw within the allowed timeframe or you will receive a **WU grade**. If your third absence is also an excused one, you may be eligible for the **INC** grade; *see* **§IV. F** *above*.

VIII. Communication

A. The preferred, primary way of reaching me is through the Discussion Board on Brightspace; just post your message. I check it often.

B. Also: **edward.look@qc.cuny.edu** Reserve it for more private issues; else use the message board.

C. **Office Hours:** Tuesdays, 2:30-3:30 PM in Remsen 120D

D. Coordinator- Dr. Sheila Sanders: **sheila.sanders@qc.cuny.edu** But *address lab questions to me*.

IX. Accomodations

A. Students with learning disabilities- You may register with the Office of Special Services by e-mailing QC.SPSV@qc.cuny.edu. For more information- website:

https://www.qc.cuny.edu/sp/

B. Counseling- Counseling Services are available to any Queens College student. This office assists with personal concerns that can affect enjoyment and success in college. Services are free, confidential, via Zoom or telephone; contact:

(718) 997-5420

or

counselingservices@qc.cuny.edu

Be sure to include in either way telephone number and CUNY ID.

X. Schedule of Experiments:

Lab #	Experiment
1	**Check-in, Syllabus, and Safety**
2	**Density**
3	**Hydrate**
4	**Precipitation**
5	**Fe-$CuSO_4$**
6	**Qualitative Redox**
7	**Copper Cycle**
8	**Molar Mass of a Metal**
9	**Solutions**
10	**Titrations – Part I**
11	**Titrations – Part II**
12	**Calorimetry**
13	**Neutralization**
14	**Check-out and Final Lab Quiz**

Queens College, CUNY Department of Chemistry and Biochemistry
Professor Edward G. Look; Coordinator Chen Wang **Spring 2026**

CHEM 114.1- General Chemistry II Laboratory

Section **5- Wednesdays** 1:40 – 4:30 PM, 153 RE
Section **6- Thursdays** 1:40 – 4:30 PM, 153 RE

LABORATORY SYLLABUS

I. General Laboratory Rules

A. **Pre- or Corequisite course-** Chem 114.4
B. **Always** wear safety goggles and contact lenses **not** allowed.
C. No short pants, skirts, nor open toe shoes are allowed, and tie back long hair.
D. **NO** food, beverages, gum, horseplay, ***nor*** stunt experiments allowed.
E. No computer nor tablet nor cell phone use in the laboratory during class activities.

II. Laboratory Manual: posted on Brightspace

III. Laboratory Reports

A. A report is required for ***EACH*** experiment

B. Lab reports are always due **next lab session**, for any lab. All lab reports will be electronically submitted through Brighspace; upload links will be established in each section on Blackboard for each lab report. **Late reports are strongly discouraged**, and they will receive a severe reduction in points, as determined by your instructor. They *don't* have to be excessively long, but be complete; *see below*.

C. **Format:**

1. ***Heading:*** Always be sure ***your name, section number, experiment title AND date the experiment was performed*** is included- ***DO NOT*** *use a cover page*.
2. ***Abstract:*** This is one short paragraph summarizing your entire paper: very succinctly say what you objective was, what you did, and what your final results were.
3 ***Introduction:*** Explain *concisely* the chemistry of the experiment, including any equations and other scientific and mathematical explanations; *i.e.*, the **theory**. No fluff, please.
4. ***Experimental:*** A **concise** but complete summary of the steps, materials, and apparatus of the experiment.
5. ***Data:*** Include your *original data*; *i.e.*, the "carbon copy" of measurements or observations you directly recorded during the experiment, signed by the instructor stapled to back of report. However, rewritten data *are to be included in the Data section of the report*.
6. ***Calculations and Results:*** Show all work; but if there is a repetitive calculation, you need only show the equation and its use only once; after that, just list the answer. Include here also any **graphs** or **diagrams** that may be required.
7. ***Discussion:*** State whether results were good or bad, and reasons why, what may have affected them, and any problems with the experiment. Be brief but complete. There may be questions you must answer, or blanks from the manual to fill; work them into your discussion.

III. C. 8. ***Conclusion:*** Summarize your final conclusions in your discussion section along with your results and very basically what you did. (The discussion section is where you actually draw your important conclusions.)

9. ***References:*** Include the lab experiment write-up and other references, including those from the internet.

IV. Grading

A. General Weekly Breakdowns
1. Each lab is graded for 100 points distributed as follows: 10% prelab questions, 10% prelab write-up in lab notebook, 60% Lab Report; 20% Performance in the Laboratory. Part A.1 will be weighted 85% of your lab grade.
2. A written comprehensive lab final will be administered during finals week; check CUNYFirst for the date. This part (A.2) will be weighted 15% of final lab grade. The lab final will cover lab safety, and contents covered during the entire semester.
3. **Week 1 grading will be different than the rest.** There will be Math quiz (20%), Safety Quiz (20%), Lab report for Exploring Boiling points (60%).

B. Prelabs
1. Prelabs, both types (*see below*), will not be accepted after the lab session. If question material wasn't covered lecture, ask me for help with prelab activity. Missing prelab quizzes receive a zero (0). No excuses are accepted.
2. **EACH** lab report is due by the subsequent lab session. Late reports are strongly discouraged and will receive a 10% penalty with each delayed week, and will NOT be accepted after two weeks or the last lab class (*i.e.*, checkout day).
3. Reports are graded for conformance to the above format and checked for plagiarism. Introduction, discussion, and conclusions are expected to be in your own words.

C. Apportionment of course points is also to be determined by your instructor, but there will be points for your performance while in the laboratory. The criteria are as follows:
1. safety- if you do not work safely, you instructor will deduct points at his discretion
2. independence- your ability to work and think independently, as determined by me
3. efficiency- your ability to correctly and quickly accomplish the experiment
4. effectiveness- and of course, how well the results turned out

D. If you attend all labs, *either* first missed lab (or report) *or* lowest report score may be dropped. Second excused absence may be substituted by final quiz score. Third unexcused absence receives a zero (0). Any further absences or missed reports will prevent you from taking the lab final; if so, you should withdraw on time or receive a WU final grade.

E. Grades for Special Circumstances
1. **W grade:** Automatic withdrawal with W- if you are not passing by April 1, you will have to make a choice between staying in the course for whatever letter grade you will get ***or*** apply for W to avoid lowering GPA. A failing student will not be eligible to apply for retroactive withdrawal or **INC grade** (*see below*) request later in the course.
2. **INC grade:** INC grade is applicable only if the student is passing the course already and has to make up NO more than one lab due to a third excused absence. Students need to request instructors for this option, and the terms for resolving the INC grade must be clearly communicated and approved by the course coordinator.

V. Laboratory Requirements:

A. **PRELAB: Write, in your own words, the theory and procedure for the experiment in your notebook before coming to lab.** Thus, all notes must be preceded by the prelab. ***This* is *in addition* to the prelab quizzes**. See schedule in §XI for order of experiments.

B. *If you drop the course, you **must** check-out ASAP!* Otherwise, you do so at the normal time on the final check-out day. If you do not check-out you will be charged a fine as listed in the Stockroom.

C. **Eye protection must** be worn at all times in the lab; penalty for failure to do so is a 0 (zero) for the day and/or **dismissal** from that day's lab with **no possibility** of make-up.

D. You must watch the lab safety video during the first lab. If you missed it, you must watch it yourself online; the link is available on Brightspace and necessary for the safety quiz.

E. You **must** have safety goggles, a lab coat and a combination lock; ***we** will issue these to you*. Your belongings must be stowed and locked in the lockers outside the lab.

F. **You *must* have an approved laboratory notebook with carbonless copy pages (for example, ISBN 978-1-533969-52-1; there are other acceptable ones), do not take any notes on scrap paper or other things. It is available through the QC online bookstore. Write in it *first*; no copying *into* it allowed.**

G. You will need a scientific calculator. and either a USB flash drive or a SD card.

H. You will read the day's experiment *before* coming to lab, and bring a hard copy with you.

VI. Safety:

A. Goggles and lab coat must be worn at all times in the lab, long pants or skirts, closed toe shoes, and long hair tied back are required. Eating, drinking, gum chewing, horseplay, stunt experiments, and contact lenses are not allowed, wear glasses to lab instead.

B. Safety shower, eyewash, and fire extinguisher locations must be noted.

C. Chemical waste handling protocols must be observed; if in doubt ***ask!***

D. Points will be deducted for unsafe practices or violations of waste protocols, and you may be ejected from lab and receive a *zero* (0) for that day's work.

E. Sign safety contract, and you must watch the safety video before any work starts, regardless of whether you have seen it before. If you miss it, watch it on Brightspace ASAP.

VII. Code of Conduct

A. Plagiarism- Plagiarism or any other form of cheating is not tolerated and will be severely punished by point and other penalties and/or referral to the Chairman and the Dean; any assignment involved will receive a grade of zero (0). Failure to properly cite a source may also be considered plagiarism.

B. CUNY Policy on Academic Integrity: Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: CUNY Legal Affairs Academic Integrity Policy.

VII. C. Inappropriate behavior, *e.g.*, horseplay or off-color language, oral or written, will not be tolerated and may lead to expulsion from class and a zero if during an examination or assignment.

D. If You Are Sick:

If you even just believe you may have COVID-19 or RSV or the flu, ***please stay home and do not come to campus***, e-mail me, and we can work with you with respect to the course material.

E. Attendance

1. Attendance is required. There will be ***no*** make-ups for missed experiments. It gets no credit and is dropped from your record **only** if the absence is excused by me. Lateness by ***more than* 15 min.** is counted as an absence. If you must miss for religious or emergency reasons, be sure to inform me to be excused. Valid documentation is required to be excused. The first excused lab is dropped from calculation of your lab score. A second excused lab may either be replaced by a quiz or by your lab final exam score. A third absence receives a zero (0) for that lab. A fourth absence will prevent you from taking the lab final exam; if you have four absences, either withdraw within the allowed timeframe or you will receive a **WU grade**.
2. If your third absence is also an excused one, you may be eligible for the **INC** grade; *see* **§IV. E** *above.*

IX. Communication

A. The preferred, primary way of reaching me is through the Discussion Board on Brightspace; just post your message. I check it often.

B. You may also e-mail me at: **edward.look@qc.cuny.edu**
However, please reserve this for more private matters. Otherwise, use the message board.

C. Office Hours: Tuesdays, 2:30-3:30 PM in Remsen 120D

D. The lab coordinator, Dr. Chen Wang, can be reached at: **chen.wang@qc.cuny.edu**
However, *all lab questions should be addressed to me*.

X. Accomodations

A. Students with learning disabilities-
You may register with the Office of Special Services. This can be done by e-mailing QC.SPSV@qc.cuny.edu. For more information, their website is:

https://www.qc.cuny.edu/sp/

B. Counseling: Counseling Services are available to any Queens College student. This office assists with personal concerns that can affect enjoyment and success in college. Services are free, confidential, and may done by Zoom or telephone. To contact:

(718) 997-5420

or

counselingservices@qc.cuny.edu

Be sure to include in either way telephone number and CUNY ID.

XI. Schedule of Experiments:

Week	Laboratory Experiments and Assignmnents
1	**IN PERSON** Check In , Safety Review, Discuss Syllabus, and Refresh Basic Math (e.g., common log, natural log, quadratic equation etc.) **Homework: Exploring Boiling Points; Prepare and Take Safety and Basic Math Quiz**
2	Iron Content of a Tablet by Redox Titration; **Online Safety Quiz AND Basic Math Quiz Due This Week**
3	Beer's Law
4	Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy
5	Osmosis and the van't Hoff *i* Factor
6	Kinetics
7	Equilibrium - Part I: Le Châtelier's Principle
8	Equilibrium - Part II: Measuring an Equilibrium Constant
9	Acids, Bases, Buffers and Salts
10	Identifying an Acidic Salt by Titration and Preparation and Analysis of a Complex Ion Compound – Part **I**
11	Preparation and Analysis of a Complex Ion Compound - Finish
12	Qualitative Analysis of Cations: Do It Yourself
13	Electrochemistry
14	Review for Lab Final and Check Out: **IN PERSON**
15	Laboratory Final Quiz

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1011- Basic Chemistry Lab (Spring 2026)

Section Number: 1011-4 (38668)

Instructor's Full Name: Dex-Ann Brown-Grant

Instructor's Email: dexann.browngrant@qc.cuny.edu

Instructor's Office Hours: *Fridays 12:10 – 1:10 pm or by appointment, email me for availability*

Textbook for the course: Available on course's Brightspace page (No cost).

Other required items: The student is responsible for bringing a printout of each lab experiment handout to every lab session. A scientific or graphing calculator is required and can be purchased anywhere. Note that lab coats, safety goggles, and required glassware are provided upon check-in.

Pre-Requisite/Co-Requisite: Chem 1013

Coordinator: Prof. Sanjai Pathak (Sanjai.Kumar@qc.cuny.edu) **[Note: Students should contact their lab instructor for ALL lab-related questions.]**

Syllabus

I. Laboratory Course Format- Hybrid

A. ALL In-person lab sessions will be held on the Queens College campus in Remsen 151 at your scheduled time and day.

B. Attendance is MANDATORY. A missed lab will receive NO credit. Students must report to lab on time. There is NO make-up for any missed laboratory experiment.

C. A lab can only be excused with documentation relating to an unplanned emergency (medical or legal) or religious observance. **SEE DETAILED ATTENDANCE POLICY BELOW (Subsection VI)**.

D. *Attendance will be taken at 9:15 am.* Due to safety concerns, any student that arrives *after 9:30 am will not be allowed to perform the experiment*.

II. Learning Outcomes

This course satisfies the following two Queens College General Education learning outcomes:
QC 1: Address how, in the discipline (or disciplines) of the course, data and evidence are construed and knowledge is acquired; that is, how questions are asked and answered.

QC 2: Position the discipline(s) in the liberal arts curriculum and the larger society

This QC College Option SCI course satisfies the following three learning outcomes:
SCI 1: Familiarity with a body of knowledge in the physical or biological sciences.
SCI 2: Successful study of the methods of science, including the use of observation, the information of hypotheses and the testing of models.
SCI 3: Experience and awareness of the impact of science on modern society

This course satisfies the Life and Physical Science (LPS) requirements of the Pathways General Education Required Core
LPS 1: Identify and apply the fundamental concepts and methods of a life or physical science.
LPS 2: Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
LPS 3: Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
LPS 4: Gather, analyze, and interpret data and present it in an effectively written laboratory or fieldwork report.
LPS 5: Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

III. General Laboratory Rules

Failure to adhere to safety guidelines may result in your removal from the lab and an automatic failure of that experiment. Always listen carefully to your lab instructor for safety precautions and procedure modifications. If an accident occurs, notify your lab instructor immediately.

A. Always wear safety goggles.
B. NO short pants, skirts, open toe shoes are allowed; tie back long hair; secure all loose clothing.
C. NO food, beverages, gum, horseplay, or unauthorized experiments allowed.
D. NO computer, tablet, or cell phone use in the laboratory during class activities.
E. Never leave a flame unattended.
F. All chemical waste must be disposed of properly. Your instructor will provide you with specific instructions at the beginning of each lab regarding how to handle the chemical waste for that experiment.

IV. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on the Brightspace in the Content Section.

V. Grading:

Your final score will be determined using the formula:

10% Prelab Quizzes

10% Post-lab Quizzes

60% Lab Reports

20% Experimental Final Exam

The following grading scale is used to determine your letter grade:

Grade	Score	Numerical value / Definition
A+	97-100	4.0
A	93-96	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-66	0.7 (Grade of D- is the lowest passing grade in the undergraduate division)
F	0-59	0.0

W and WU Grade policy – THE DEADLINE for CHANGE TO P/NC and UNEVALUATED WITHDRAWL IS APRIL 13, 2026. Students who do not officially withdraw by April 13, 2026 (and receive a W grade) but stop attending classes and do not participate in any way after the withdrawal date will be given a WU grade. Any participation in class (i.e., lab work, homework, taking quizzes and exams) after the withdrawal date will disqualify you from receiving the WU grade, and you will be given the appropriate letter grade.

All laboratory experiments are to be performed individually (and evaluated by the instructor). There are no team experiments. Each person registered for the lab is to perform each laboratory experiment individually.

A. There are pre-lab quizzes, lab reports, and post-lab quizzes for all experiments performed. Bring the lab handouts for each scheduled lab. **Students who fail to bring the lab handout for the scheduled lab to class will not be permitted to enter the lab.**

B. A pre-lab activity, posted on **Brightspace**, is due before the beginning of each lab. Each pre-lab is based upon the background and procedure for the lab activity to be conducted and will be available for one week prior to the scheduled lab. Before you come into class, you are required to read the laboratory procedure, as well as the background information pertaining to the lab that will be performed that day.

C. Data measured in the laboratory is to be recorded directly on your report sheets. Report sheets can be located at the end of each lab handout document (located under the content tab in Brightspace). Each student must print their own lab write-up. A report sheet will be collected at the end of each lab experiment. Failure to hand in a lab report will result in a grade of zero for that lab, which will be averaged into your overall laboratory grade.

D. If you have attended all the labs without any absences, one lowest-scored lab sheet will be dropped from your final lab report average.

E. Each lab experiment will have a post-lab quiz posted on **Brightspace**. Each postlab is due before the next scheduled lab (generally one week later).

F. Final Exam will be conducted in person and will include an experiment each student will perform individually. The details will be uploaded to **Brightspace** and discussed in lab before the date of the final exam. **There are no make-ups for the FINAL EXAM. If you miss the Final Exam for the lab, you will be given a grade of zero (0) for the test and your grade will be calculated according to the grading formula.**

VI. Attendance policy

This is a laboratory class with a limited capacity in the classroom. <u>As a result, there are NO make-up options (Excused or Unexcused) for any missed lab</u>. YOU ARE EXPECTED TO ATTEND ALL LAB SESSIONS. If you miss a lab class due to QC-approved religious reasons OR due to emergencies, inform the instructor and make sure it is excused. A valid documentation for the excused absence will be required. If a doctor's note, it must be on the doctor's letterhead and signed by a physician with a different last name from the student, and a statement that the physician is not a relative of the student.

<u>Unexcused absences are given a zero and included in the calculation of final lab score.</u>

In case of absence(s), the following policy will be adopted:

1st Excused Absence: The missed lab will be excluded from calculating your overall lab score.

2nd Excused Absence: A quiz will be given for the missed lab OR the final lab exam score will be used to replace the missed lab score.

Any further absences will result in a zero grade for the lab irrespective of the reasons. If you are absent for 4 or more lab periods, you will NOT be allowed to take the lab final and expected to withdraw from the course. If you are not withdrawn by the deadline, you will be issued a WU grade.

INC grade: There is no INC grade for this course. If your grade is suffering due to absences in the lab, you are expected to withdraw on time and re-enroll for the next semester.

VII. Other Important Information

(ii) If you drop the course, you must check-out ASAP! Otherwise, you do so at the normal time on the final check-out day. If you do not check-out, you will be charged a fine as listed in the stockroom.

(ii) On the check-in day, a combination lock will be issued to you.

(iii) **Code of Conduct**

A. Plagiarism- Plagiarism or any other forms of cheating is NOT tolerated and will be severely punished by point, other penalties, and/or referral to the Chairman and the Dean; Any assignment involved will receive a grade of zero. Failure to appropriately cite a source of information may also be considered plagiarism.

B. Inappropriate Behavior, e.g., horseplay or off-color language, oral or written, will NOT be tolerated and may lead to expulsion from class and a grade of zero.

(viii) COVID-19 Issues: If you have COVID-19, symptoms thereof, or otherwise ill, do not come in, stay home, seek medical advice, and inform your instructor AND coordinator ASAP.

(viii) CUNY Legal Notice on Live Recordings:

When applicable: “Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.”

(viii) Available accommodation for students with learning disabilities: Candidates with disabilities needing academic accommodation should: 1) register with and provide

documentation to the Special Services Office, Frese Hall, Room 111; 2) bring a letter indicating the need for accommodation and what type. **This should be done during the first week of class.** For more information about services available to Queens College candidates, visit the website, or contact: Special Service Office; Director, Miriam Detres-Hickey, Frese Hall, Room 111; 718997-5870 (Monday – Thursday 8:00 a.m. to 5:00 p.m. & Friday 8:00 a.m. to 4 pm.): https://www.qc.cuny.edu/sp/

(viii) Counseling Services are also available to any Queens College student. This office assists students with personal concerns that can affect their enjoyment of and success in college. Services are free and confidential. All sessions take place on Zoom or by Telephone, depending on student preference. To make an appointment, students should call 718-997-5420 and leave a message with their phone number and CUNY ID. They may also e-mail: counselingservices@qc.cuny.edu

(viii) CUNY Policy on Academic Integrity: Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at https://www.cuny.edu/about/administration/offices/legalhttps://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/affairs/policies-procedures/academic-integrity- policy/. Please read this document, paying careful attention to the sections on plagiarism and Internet plagiarism. If you are not sure how to cite work you have found on the internet, please review the APA Guidelines provided by the Purdue OWL.

Schedule of Experiments

Week	Date	Experiment
1	**01/30/2026**	Check-in, Safety Video, #1 – The Bunsen Burner
2	**02/06/2026**	#2 – Laboratory Measurements
3	**02/13/2026**	#3 – Conversion Factors
4	**02/20/2026**	#4 – Density
5	**02/27/2026**	#5 – Determination of the formula of a Metal Oxide
6	**03/06/2026**	#6 – Water of Hydration
7	**03/13/2026**	#7 – Chemical Reactions Part 1: Combination and Decomposition Reactions
8	**03/27/2026**	#8 – Chemical Reactions Part 2: Single and Double Replacement Reactions
9	**04/10/2026**	#9 – Calorimetry
10	**04/17/2026**	#10 – Kinetics
11	**04/24/2026**	#11 – Equilibrium
12	**05/01/2026**	#12 – Charles Law
13	**05/08/2026**	#13 – Analysis of Vinegar by Titration
14	**05/15/2026**	Check-out & Final Exam
15	**05/22/2026**	Evaluation and Review