

**QUEENS COLLEGE OF THE CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY**

CHEMISTRY 1144

SUMMER 2026

Lecturer: Dr. Alexander Altman

Office hour: M, T, W, Th: 12:00 – 12:45 in Remsen 206

Welcome to Che 1144 where we continue our exploration of the world of matter. After our semester together I hope you will see the world around you from a different perspective, from the perspective of a chemist. I hope that you will grow beyond the mere memorization of definitions to the realization that each definition is a model used to classify and explain matter and its changes; that every equation is the mathematical manifestation of the way chemists quantify matter and its changes. Chemistry isn't about words and numbers, it's about stuff, the stuff we and the rest of the world are made of.

The best way to contact me is by email: alexander.altman@qc.cuny.edu I will usually respond the same day. (Email will not be checked between Friday afternoon and Saturday night.)

You will need to have access to Aleks. See more information in "Guide to Using Aleks"

Text: Overby; Chemistry, 15th ed, McGraw-Hill. You will get access to the eBook bundled with your access to Aleks. You can purchase a loose-leaf copy of the text from the publisher. (See the link in Aleks.)

Optional textbook: OpenStax College. (2019). *Chemistry*. OpenStax.

<https://openstax.org/details/books/chemistry-2e/>

Hardcover: ISBN-13: 978-1-947172-62-3

Paperback: ISBN-13: 978-1-59399-578-2

Digital: ISBN-13: 978-1-947172-61-6

License: by OpenStax is licensed under Creative Commons Attribution License v4.0

Other required items: You should make sure that Brightspace is operating appropriately on your tablet or computer. Students must make sure they login to Brightspace to check for course material and announcements and check their email that is associated with Brightspace.

Technical Support: Email Helpdesk@qc.cuny.edu, or call the Student Support Hotline (718- 9973000).

Recitation: Recitation meetings are a great way for you to build your chemistry problem solving skills. During the semester, each student is required to present solutions to at least two of the starred (*) recommended problems in the list below. Pick a starred problem that you feel you can comfortably present to the class. Be prepared to present the problem and its detailed solution to the class. Your instructor and the other students may dialog with you. Your instructor will then ask you a follow-up question based on the material in the problem you solved. These questions count towards your recitation grade. Your instructor may also answer any questions you bring up about the course material. Quizzes will also be given during the semester.

LECTURE SCHEDULE

Dates	Topic	Chapters
6/29, 6/30, 7/1	Intermolecular Forces and Liquids and Solids	11
7/2, 7/6, 7/7	Physical Properties of Solutions	12
7/8, 7/9, 7/13	Chemical Kinetics	13
7/14	Exam #1	
7/15, 7/16, 7/20	Equilibrium	14
7/21, 7/22, 7/23	Acids and Bases	15
7/27, 7/28, 7/29	Acid-Base Equilibria	16
7/30	Acid-Base and Solubility Equilibria	16
8/3*	Exam #2	
8/4, 8/5, 8/6	Entropy, Gibbs Energy and Equilibrium	17
8/10, 8/11	Electrochemistry	18
8/12	Exam #3	
8/13	Open Chemistry Forum	All
8/17	Cumulative Final Exam	

As real life frequently happens, it may be necessary to change this schedule. If any changes are made you will be notified via Brightspace and email. Make sure the email you have listed in Brightspace is one that you regularly check.

Online Learning: A key ingredient in your success in this course is keeping up with the course material. The Aleks learning system is there to help keep you on track. Part of your course grade is based on your timely mastery of the topics assigned online. Please be aware of the dates of the knowledge checks and of the goal dates. **No extensions can be given for these dates.** (See the guide to Aleks posted in Blackboard for more information.)

NOTE: A grade of C or better in Chemistry 1134 and Che 1131 (or their equivalents) is a prerequisite for this course. If you completed the first semester of general chemistry at another school, please speak with me at the beginning of the semester to verify that you have taken the correct prerequisite course.

A simple scientific calculator is required for this course. It should be able to handle scientific notation, square and cube roots and logarithms.

Exams: Exams will be given in person on the dates indicated in the schedule. Make-up exams will not be given. If you are not physically able to take one of our exams at the assigned time, contact me as soon as possible.

Academic Integrity: Students are expected to maintain the highest standards of academic integrity in all aspects of the course. I strive to assess every student's mastery of the course material fairly and accurately. I assume everything submitted by you represents your knowledge of the course material. If that isn't true, it is impossible for me to do my job. I am sure that most of you are honest, hard-working students who appreciate the fact that grades are based on student achievement and that those few who attempt to get by dishonestly will not succeed. Any violations will be treated seriously. For example, any violations observed during an exam can result in the student receiving a zero for that exam as well as disciplinary action from the College.

Suggested Questions and Problems from Overby; Chemistry, 15th ed.

I will not be teaching you every topic in the textbook, and you are only responsible for the material that I teach you. This list of questions and problems reflects the material that I plan to cover this semester. Any question in the textbook that is significantly different from the questions in this list is beyond the scope of this course and will not be showing up on any of our quizzes or exams.

Chapter 11: 3, 6, 7, 10*, 11, 12*, 14, 15*, 17, 18*, 19, 49, 50, 51, 52, 53, 54*, 55*, 59*, 60, 64, 65*, 66, 67, 72, 73, 75, 76*, 77, 78, 79, 82, 87, 89*, 91*, 92, 108

Chapter 12: 1, 6, 7, 10, 13, 17*, 18*, 22*, 23, 24*, 36, 41, 49*, 50, 51*, 52*, 53, 55, 56, 57*, 59*, 62, 64*, 67, 68, 69*, 70*, 71, 73*, 75, 76* Also from **Chapter 6:** 66, 69

Chapter 13: 1, 7, 8, 12, 13, 15*, 16, 21, 22, 25*, 26*, 31, 37, 48, 51, 53, 54, 55*, 59, 65, 78, 80, 89, 92*, 94*, 96*, 110, 116*, 117*

Chapter 14: 5, 6, 7, 8, 9, 13*, 14*, 15, 16*, 19*, 20*, 23*, 24*, 26*, 29, 32, 34, 39*, 41*, 43*, 45*, 53, 55, 56, 57*, 58*, 59, 60

Chapter 15: 1, 2, 3*, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 25*, 26*, 27, 31, 33, 39, 42*, 43*, 45*, 52, 54, 55*, 56*, 60, 61, 62, 71, 77*, 78, 80*, 81*, 82*, 91, 94, 95, 96

Chapter 16: 4, 7, 9, 11*, 12, 14*, 15, 17*, 18, 19, 23*, 24*, 26, 31, 33*, 34*, 47, 49, 51, 58*, 61, 104

Chapter 17: 5, 11*, 12, 13*, 14, 17, 19*, 21, 23, 24, 27*, 28, 32, 44, 64

Chapter 18: 5, 10, 11*, 12, 13, 15*, 16, 21, 23, 25*, 26, 45, 48*, 53, 55

Grade: Your grade in the course is based solely on your demonstrated mastery of the material of Che 1144 assessed using the following instruments:

Hour Exams (3) = 40%; Recitation = 20%; Aleks = 15%; Final Exam = 25%

W and WU Grade policy – THE DROP DEADLINE (W OR CHANGE TO P/NC) IS AUGUST 3, 2026. Students who do not officially withdraw by August 3 (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., attending lecture or recitation, homework, taking quizzes or exams) after the withdrawal date will disqualify you from receiving the WU grade, and you will be given the appropriate letter grade you earned.

Restrictions on Sharing of Posted Lecture Materials: Lecture materials that are posted (such as presentations, lectures, welcome video clips etc.) are shared with the class for the purpose of facilitating the learning experience and are not to be copied, downloaded or shared with anyone outside of the class.

Queens College Classroom Recording Policy: Audio or video recordings of all or parts of classes at Queens College may not be made without 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 Recording Policy applies to both students and visitors. Students and visitors are not authorized to copy, download, or disseminate authorized recordings 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.

REASONABLE ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

The Office of Special Services (SPSV) is committed to supporting students with qualifying disabilities under the Americans with Disabilities Act (ADA) by providing reasonable accommodations to ensure equal access. If you have previously received accommodations due to a disability, believe you may have a disability, or have a temporary disability, please visit the office's website (<https://www.qc.cuny.edu/sp/>) for further information on the assistance they can offer you. Accommodations are not retroactive, so you are encouraged to get registered sooner rather than later. You may also contact their office at qc.spsv@qc.cuny.edu or call 718-997-5870 during office hours for assistance as well.

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 (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/reference_list_electronic_sources.html).

Department of Chemistry and Biochemistry
Queens College CUNY

Tentative Lecture Schedule for Chemistry 101.3, section 01, Summer 2026

Material Required: General, Organic, & Biological Chemistry, 6th edition by smith) Packaged with Aleks 360 18-Weeks Access Code (with eBook access). This may be purchased through the QC bookstore or go to aleks.com, sign up for the course code indicated below, and purchase the package directly through ALEKS. After purchasing the online package, the purchase of a print copy is optional but strongly recommended.

Class Hours: Lecture: Mon., Tue., Wed., Thurs., 9:00 AM – 10:15 AM

Room: Remsen 105

Instructor: Mr. A.Chouaib

Office Hours: Thursday, after class

Email: Abderrahim.Chouaib@qc.cuny.edu

Office: RE 206

Dates	Chapter	Topic	Notes	Aleks Due*
Jun 29,30	1.1-1.3	Matter and Measurement (Part 1)		July 3
July 1,2	1.4- 1.10	Matter and Measurement (Part 2)		July 14
July 6,7,8	2	Atoms and the Periodic Table		July 14
July 9,13,14	3	Ionic Compounds	July 14- Quiz # 1 (chapt 1&2)	July 22
July 15,16,20	4	Molecular Compounds (omit 4.3)		July 22
July 21	5A 5.1 5.3	Chemical Reaction: Classification & Balancing (omit 5.4)	July 21- Quiz # 2 (chapt 3&4 up to the material covered through July 20)	July 30
July 22		Exam # 1 (chapters 1-4) 60 min.		
July 23,27	5B 5.5 5.9	Chemical Relationships: Mole and Mass Relationship (omit 5.10)		July 30
July 27,28,29	6	Energy changes, reaction rates, and Equilibrium		August 6
July 30,Aug 3,4	7	Gases, Liquids and solids (Omit 7.6)	July 30 – Quiz # 3 (chapters 4,5 beginning of 6	August 6
Aug 5,6	8	Solution Part 1		
Aug 10		Exam # 2 (chapters 4-7) 60 min.		
Aug 11	8	Solution Part 2 (Omit 9.10)		August 17
Aug 12,13,17	9	Acids and Bases	August 13- Quiz # 4 (chapters 7&8	August 17
Aug 18		Final Exam, Chapter 1-9		

GRADING

- Grading. Your final score is based on the following calculation:
Aleks Online Homework: 20%; Recitation Quizzes: 15%; Lecture Exam 40%; Final Exam: 25%
Please note: A final grade of “C” or better is required to continue on to chem 102.
- Homework assignment must be completed by the due date online using **ALEKS Online Homework Program**, course code: **JPHMK-FTYWU**, The following financial aid code will grant you free access for the first two weeks after which you must purchase an ALEKS package:
- **53BFF-121E3- 733CD-AA059**

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****Summer 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: *Organic Experiments*, Kenneth L. Williamson, 9th Edition,
 Brooks/Cole Cengage Learning, 2004, ISBN-10: 0618308423 (this book is now out of print)

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

Chem 251.1 Section Number: 2**Lab Instructor: J. Eduardo Ocando****Instructor's Email: jocando@qc.cuny.edu****Lab Instructor's Office Hour (on-line): T 2:40PM**

Lab coat, safety goggles, and required glassware are provided upon check-in.

Coordinator: Prof. Chen Wang (Chen.Wang@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.***

Session	Experiment
1	Check-in. No laboratory work can be done. Introduction. Review of safety in the Orgo. Lab., Instructions on disposal of chemical waste, Lab. protocols, Maintenance of a laboratory note-book.
2 and 3	Melting Point Determination (Chapter 4, pages 50-57) Determination of Boiling Point via Distillation (Chapter 5) and via Micro Boiling Point Method (Chapter 4, pages 57-60)
4	II. Isolation of Clove Oil from Cloves (Chapter 6). Use ether for extraction rather than DCM
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)
6	III. Crystallization i. Isolation of Crystalline Acetylsalicylic Acid from Aspirin tablets (Lab Notes) ii. Recrystallization of Benzil (Lab Notes, Chapter 3, pages 45-46)
7	IV. Preparation of Cyclohexene (Chapter 19)
8	V. Preparation of 1-Bromobutane (Chapter 16)
9	VI. Nucleophilic Substitution Reactions of Alkyl Halides (Chapter 17)
10	VII. Oxidation of Cyclohexanol (Chapter 22) Use ether for extraction
11	VIII. Grignard Reaction: Preparation of Triphenylmethanol (Chapter 38)
12	Complete VIII. IX. Reactions of Triphenylmethanol - Parts 1, 2, and 3 (Chapter 31)
13	Finish IX. (and any other unfinished experiments)

14	Check-out No experimental work is permitted on Check-Out Day.
Final exam	TBD

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 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 (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.

Prelab Preparation AND Lab Reports

A. PRELAB: You need to hand write 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 Brightspace. 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.**

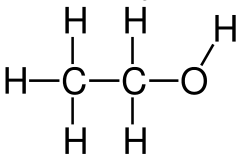
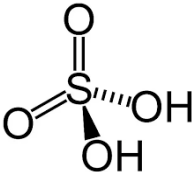
B. Lab Reports Format

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 word. 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 works; 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, $\text{CH}_3\text{CH}_2\text{OH}$ 	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, your 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 **MUST** 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.

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
General Chemistry I – CHEM113.4, Summer 2026

Instructor: Emmanuel Chang; echang@qc.cuny.edu

Office hours: Monday, Wednesday 12 – 12:45 PM, and every day after class for 15 minutes.

I. Course Information. Chem 113.4 is the first semester of a two-semester science majors/pre-health professions level introductory college chemistry course. In the summer term, this course meets 4 times weekly (75 minutes) for lecture, and 2 times weekly (50 minutes) for recitation. Recitation periods will be used for problem solving, additional instruction, review and quizzes. **Communication with the instructor is via email, during office hours or immediately after class.**

Lecture [Section 1, Registration code 6439]: Monday - Thursday, 1:00-2:15 PM, Remsen 101

Recitation [Section 1A, Registration code 6438]: Tuesday and Thursday, 2:30-3:20 PM, Remsen 101

COREQ: CHEM 1131. PREREQ: A grade of C or better in MATH 115 (or equivalent) Note: It is recommended that students have passed the New York State Regents Examinations in Chemistry or Physics with a score of 80 or higher, or have a grade of C or better in CHEM 101.3 and 101.1 before enrolling in this course.

Course description: 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:

- Apply the concepts of measurement, units, significant figures, dimensional analysis, and stoichiometric ratios to chemistry-related calculations.
- Recognize, write formula and names of simple compounds and illustrate their structures.
- Extract chemical information from the periodic table of the elements
- Explain the concepts of ionic and covalent bonding.
- Correlate molecular structure with chemical and physical properties.
- Describe & explain the following principles/concepts: stoichiometry, quantization, orbitals, gas laws, chemical reactions.

Textbook:

Required: Chemistry, J. Overby, 15th Ed., McGraw-Hill, 2025. **eBook is included with ALEKS account.**
Non-graphing scientific calculator, e.g. Texas Instruments TI-30XIIS or Casio Fx-260. No graphing calculators or devices with internet capability are permitted on exams or quizzes.

Online assignments for this course are on a website called ALEKS (Assessment and LEarning in Knowledge Spaces). An account with ALEKS is required (\$83.33 for the semester and includes the eBook). ALEKS is a Web- based, artificially intelligent assessment and learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what a student knows and doesn't know in a course, and then instructs the student on the topics she is most ready to learn. As a student works through a course, ALEKS periodically reassesses the student to ensure that topics learned are also retained. ALEKS has been shown to improve outcomes in general chemistry, but only if the student commits to doing the work. If you would like an A in this class, expect to spend up **10 hours a week or more** using this system.

To register for ALEKS:

- (1) Go to: <http://www.aleks.com>, and click the link for "Sign up (New Student?)" in the upper right corner.
- (2) Enter the course code **JFMWA-C9HVE** and click "Continue."
- (3) Verify that you are registering for the correct class and click on "Confirm."
- (4) If you have never used ALEKS before, choose "I have never used ALEKS before" and fill in the registration information. You will be assigned a username. Store this in a secure place, and remember your password.
- (5) If you have used Aleks in another course, you can enter your username and password.
- (6) Select "No, I need to purchase an access code". Or, if you are not able to pay for access immediately, you will have two weeks of complementary access using the financial aid access code: **01C0F-B0068-09F27-5CB58**. This gives you **access to the class for two weeks. BEFORE those two weeks are up, you must pay for the course**. It does not give you extra time.
- (7) When you see the drop-down menu for "Choose your access length," choose 18 weeks (\$72.19) for one semester, or 52 weeks for the full year (\$109.38). Do not select the six-week option, as this will not give you enough time to finish this class that runs for 7+ weeks. 52 weeks is the best value if you plan to continue with Chem 114 in the following academic year.
- (8) To get credit for your work, you MUST your CUNYFirst name (given or preferred), and your CUNYFirst EmplID.
- (9) You may need to activate your account from your email. If you used the financial aid code, or if you still have time left from a previous class, you can extend your access to your new class at any time by selecting "Extend access" from the class tile menu and entering your new (purchased) access code. You do not need to create a new ALEKS account to continue your class.

START EARLY AND DO NOT PROCRASTINATE. You should complete the homework for each chapter within one week after the chapter is covered in the lecture. The official due dates for each chapter are indicated on the schedule on the next page. After every few chapters, there may be a "Knowledge-Check Progress Assessment" – **Do not click "I don't know" unless you don't know. This will set you back.**

Optional textbook: OpenStax College. (2019). *Chemistry*. OpenStax.

<https://openstax.org/details/books/chemistry-2e/>. Ebook is free. Print book available for a small charge.

Hardcover: ISBN-13: 978-1-947172-62-3

Paperback: ISBN-13: 978-1-59399-578-2

Digital: ISBN-13: 978-1-947172-61-6

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Calculator: A **scientific calculator** should be brought to all class meetings and is required for exams and recitation classes. Casio FX-260 or TI-30X models are recommended and available from retailers like Amazon, Target and Walmart for about \$12-15. **Graphing calculators and calculators with storage are not permitted. Phones, tablets and other internet-connected devices may NOT be used on exams or quizzes.**

Other required items: You should make sure that **Brightspace** is operating appropriately on your tablet or computer. Students must make sure they login to Brightspace to check for course material and announcements and check their email that is associated with Brightspace. For technical support, email Helpdesk@qc.cuny.edu, or call the Student Support Hotline (718- 997-3000).

Important Notes:

This course requires a large quantity of work in ALEKS; be prepared to spend a minimum of 10 hours a week working in ALEKS.

- Please purchase the Aleks homework as soon as possible (**within the first week of class**). Your courtesy access is only available for two weeks. If you are having difficulties purchasing the codes, please send me an email immediately; do not wait until your courtesy access expires. No student will be exempt from completing the ALEKS assignments.
- There are no extensions on ALEKS assignments. Due dates are posted.
- No material (now or in the future) obtained from this course can be distributed, sold, or purchased.

Grading and Evaluation

The grade is a 100-point grade scale as shown in **Official Queens College Grade Scale** (it will implement official updates). At the end of the semester, grades may be curved to meet department standards. There will be no extra credit provided at the end of the semester at student's request. An INC grade will not be given to a student to avoid an F or WU grade.

The final course grade will be calculated based on:

10% ALEKS Homework

45% Lecture Exams - 3 exams, no makeups (30 to 40 multiple choice)

30% Final Exam - Cumulative (60 to 80 multiple choice)

15% Recitation Quizzes – Multiple choice, written answer and/or calculations

Grade	Average	GPA
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-	60-62	0.7
F	0-59	0.0

Tentative class schedule. This schedule is subject to change. The lecture schedule is fluid and dates are approximate. Changes to exams and quizzes will be announced in class and posted on Brightspace. For the most up to date information and activities, always refer to the course page in Brightspace. **Because this is a 7-week summer course, the pace is about twice as fast as in a regular semester. Occasionally, material may be presented by video lecture for required viewing outside of class.**

Date	Book Chapter	Topic	ALEKS Due Date
6/29, 6/30	Chapter 1	Intro & Measurement and the Properties of Matter	7/14
7/1, 7/2*	Chapter 2	Atoms, Ions and Molecules	7/14
7/6, 7/7, 7/8	Chapter 3	Mass Relationships in Chemical Reactions	7/14
7/9*, 7/13, 7/14	Chapter 4	Reactions in Aqueous Solutions	8/2
7/15	--	Exam 1 (Unit 1: Chapters 1, 2 and 3) – No Chapter 4	
7/16, 7/20, 7/21*	Chapter 5	Gases	8/2
7/22, 7/23, 7/27	Chapter 6	Thermochemistry	8/2
7/28*, 7/29, 7/30	Chapter 7	Quantum Theory & the Electronic Structure of Atoms	8/11
8/3	--	Exam 2 (Unit 2: Chapters 4, 5 and 6) – No Chapter 7	
8/4	Chapter 8	Periodic Relationship among Elements	8/11
8/5, 8/6, 8/10	Chapter 9	Compounds and Bonding	8/11
8/11, 8/13*	Chapter 10	Structure and Bonding Theory	8/14 Extra Credit
8/12	--	Exam 3 (Unit 3: Chapters 7, 8, 9)	
8/17	Final Exam		Aleks Open Pie due 8/17

Recitation quizzes are scheduled for: 7/2, 7/9, 7/21, 7/28, 8/13.

College Policies and Student Services

W and WU Grade policy – Students who do not officially withdraw by the drop deadline (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. Participation in class (i.e., lab work, homework, taking quizzes and exams) after the withdrawal date disqualifies you from the WU grade, and you will be given the appropriate letter grade.

Restrictions on Sharing of Posted Lecture Materials: Lecture materials that are posted (such as presentations, lectures, welcome video clips etc.) are shared with the class for the purpose of facilitating the learning experience and are not to be copied, downloaded or shared with anyone outside of the class.

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 or calling 718-997-5870. The Office of Special Services (SPSV) is committed to supporting students with qualifying disabilities under the Americans with Disabilities Act (ADA) by providing reasonable accommodations to ensure equal access. If you have previously received accommodations due to a disability, believe you may have a disability, or have a temporary disability, please visit the office's website (<https://www.qc.cuny.edu/sp/>) for further information on the assistance they can offer you. Accommodation is not retroactive, so you are encouraged to get registered sooner rather than later.

Course Policy on Academic Integrity: Many students in this class aim to become doctors, nurses, physician assistants, pharmacists, researchers, engineers and other professionals where integrity is of the utmost importance. Establishing a foundation of professional ethics and integrity starts during your educational years. Violation of the standards of academic integrity will result in the automatic failure of the class. These include but are not limited to cheating and plagiarizing, such as using material, either written or via electronic devices, including AI, during closed-book assessments, and using someone else's (present or former student) work in part or in full, using uncited sources, copying without quotation, and obtaining unfair advantages by purchasing answers or hiring individuals to do your work.

- For in-class assessments, there is no use of internet connected devices, including but not limited to mobile phones, tablets, headphones or earbuds, computers, smart watches, smart glasses or other smart devices on in-class assessments. Students may be asked to store their device with the instructor or proctor for the duration of the exam. Students may be directed to leave phones and other materials in a specific location in the classroom. Seating may be assigned or rearranged by the instructor or proctor. **The unauthorized presence of a prohibited device on or around the student's person whether it was actively being used or not, and other non-compliance with instructions regarding seating or other directions related to academic integrity leads to the automatic presumption of cheating and the failure of the course.**
- **Use of restrooms is prohibited during exams. Those with a condition requiring restrooms during exams may consult with the Special Services Offices for possible accommodation.**
- Copying or paraphrasing extensively from generative AI such as ChatGPT is not allowed. If AI is used for assignments, including online homework, you must cite the source and prompt(s) used, and describe how results were utilized.
- At the instructor's discretion, students may be asked to explain, confirm or clarify their answers to written assignments, Aleks homework, spreadsheets and other submitted materials, and quizzes and exams in a face-to-face setting to receive credit.

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/academicintegrity-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 (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/reference_list_electronic_sources.html).

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 services are available free of charge. You can learn more about confidential mental health services available on campus at: <https://www.qc.cuny.edu/StudentLife/services/counseling/counseling/>

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 remember to 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, at the Teaching Evaluations Data: Spring 2010 – Present (<http://ctl.qc.cuny.edu/evaluations/data/>). All responses are completely anonymous; no identifying information is retained once the evaluation has been submitted.

Classroom Recording Policy: Neither photographs nor video 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.

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (Summer 2026)

Section Number: 2 (6433)

Instructor's Full Name: Abderrahim Chouaib

Instructor's Email: Abderrahim.Chouaib@qc.cuny.edu

Instructor's Office Hour: Thursday 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 (6/29) 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 (7/01) Iron Content of a Tablet by Redox Titration

Week 3 (7/06) Beer's Law

Week 4 (7/08) Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy

Week 5 (7/13) The van't Hoff i Factor and Osmosis

Week 6 (7/15) Kinetics

Week 7 (7/20) Equilibrium - Part I: Le Châtelier's Principle

Week 8 (7/22) Equilibrium - Part II: Measuring an Equilibrium Constant and

Preparation and Analysis of a Complex Ion Compound – Part I

Week 9 (7/27) Preparation and Analysis of a Complex Ion Compound - Finish

Week 10 (7/29) Acids, Bases, Buffers and Salts

Week 11 (8/03) Identifying an Acidic Salt by Titration

Week 12 (8/05) Qualitative Analysis of Cations: Do It Yourself

Week 13 (8/10) Electrochemistry and **Review for Lab Final QUIZ**

Week 14 (8/12) Check Out and **Lab Final Quiz**

Week 15 (8/17) No Meeting