CHEM 163 Syllabus & Schedule SPRING 2023

Who should take this course?
Chemistry In Modern Society (Chem 163) is a 3 credit course intended for *non-science majors* and it counts towards general science requirements. *This course satisfies the Scientific World (SW) requirement of the Pathways General Education Flexible Core*.

Learning Outcomes:

1. *Obtain a general knowledge of history of the field of chemistry and its relation to life sciences and scientifically inclined to gather, interpret, and assess information from print, audio, video, and internet.*
2. *Obtain a general knowledge of how scientific theories are formulated and tested by experimentation. Analytically evaluate evidence and arguments and critically evaluate for misconception or misrepresentation in current events.*
3. *Distinguish conclusions based on factual evidence to inconclusive models that support some or part of the evidence.*
4. *Understand the fundamental chemistry principles of everyday household items and their safety.*

Course Content:

This course presents the basic principles of chemistry with intellectual honesty but without focusing on theory and mathematical analysis used in courses for majors. The focus is instead on practical applications of chemistry that we see in everyday life that have significant impact, both good and bad, on human society. Wherever possible chemical demonstration are done in class to illustrate the concepts. The approach throughout is to provide a background of chemical principles and processes and relate them to their impact on human society. Problems involving environmental pollution, energy sources, nuclear chemistry, and human health are discussed. Topics are presented that introduce a new approach, Green Chemistry, to designing chemicals and chemical processes that are beneficial for human health and the environment.

Course Objectives:

1. Understand how observations, the formulation and testing of hypotheses and the scientific method are used to discover the principles of chemistry and prepare materials used in real world applications.
2. Understand the meaning of physical and chemical properties, measuring properties like mass, volume, density, temperature, etc. with proper units and use them to distinguish pure and impure substances, elements, compounds, and mixtures.
3. Be able to read the periodic table and associate the symbol and other numbers there with element name, subatomic particle, and mass.
4. Understand the periodicity in physical and chemical properties like thermal and electrical conductivity, specific heat capacity, atomic size, ion size, ability to lose or gain electrons, form ionic or covalent compounds, etc. and highlight how periodic table guides in making new materials with desired properties.
5. Be able to understand what chemical formulas mean, what bonds them together, visualize their overall structure and what leads to their bulk physical properties like its state of matter (solid, liquid, or gas), viscosity, vapor pressure, boiling point, melting point, etc.
6. Be able to appreciate the significance of chemistry in your daily life. Understand household chemicals and their properties like acidity and basicity. Understand the relationship between chemicals found in food, air, water, and soil.
7. Understand chemical energy involved in chemical reactions and its relation to other forms of energy like heat and electricity.

8. Be able to evaluate the formula mass and the concept of mole.
9. Understand the law of conservation of mass and the requirement to account for the number of atoms before and after a reaction.
10. Be able to evaluate the amount of materials needed and the amount of products that can be formed when a chemical reaction is carried out.
11. Be able to critically evaluate issues related to science described in communications media. Be able to assess ethical, moral, economical, health, and environmental impacts from all sources and make informed decisions as consumers and voters.

Instructor Information:

PROF. JULIE LEVENTHAL jcolis@qc.cuny.edu
Office Hours: FRI 12:55-1:55PM or by appointment

Section Information:

Class Meets every Friday 10:00AM to 12:50PM at REMSEN 017, QUEENS COLLEGE CAMPUS.

Textbook:

21st Century Chemistry, Kimberly Waldron, Roberts and Company Publishers, 2014. ISBN 978-1-936221-39-4. You can buy the textbook from any source. The publisher link is given here for your easy reference. Roberts and Company: http://www.roberts-publishers.com/

CLASS Schedule & EXAM Schedule:

LECTURE Class meets every FRIDAY as per QC's Friday class schedule.
(Bring a CALCULATOR and PERIODIC TABLE).

LECTURE CLASS will follow after EXAMS 1 and 2.
Note: Examination dates are fixed-but chapter coverage may vary somewhat

1/27: Chapter 1 SCIENCE
2/03: Chapter 2 ATOMS
2/10: Chapter 3 MATTER
2/17: EXAM 1. Regular class will follow after class exam. Chapter 4 BONDS
2/24: Chapter 4 BONDS
3/03: Chapter 6 GASES
3/10: Chapter 6, 7
3/17: Chapter 7 CHEM RXNS
3/24: Chapter 7, 8 WATER
3/31: EXAM 2. Regular class will follow after class exam. Chapter 9 SOLUTIONS
4/14: Chapter 10 ACID RAIN
4/21: Chapter 12 ENERGY
4/28: Chapter 13 SUSTAINABILITY
5/05: ***CATCH UP*/ REVIEW**
TBA: FINAL EXAM – cumulative of all chapters covered

Class Quizzes: You can expect quizzes during every class given once or twice during a class period. These quizzes test your understanding of what was done in class and if you are keeping up with the reading.

Class Homework: There will be several homework assignments throughout the semester that will be posted on BLACKBOARD in order to ensure that students are adequately preparing for class and to reinforce class learning. It is imperative that students hand these in **ON TIME** as they **will not be accepted late**. The HOMEWORK will be *unavailable* on Blackboard after the due date has passed.

Class Exams: All material covered up to the previous class will be included for the exam. All exams are cumulative. Hence, keep reviewing all old material every week. Recalling old material is required for learning new material. Students are expected to take each exam; if you must miss an exam due to an actual emergency, the exam may be waived only if the professor determines such action to be warranted by the emergency and that you have behaved responsibly and have alerted the professor at the first opportunity. ***There are absolutely no makeup exams.*** Students who miss an exam will have it added to the total worth of the final exam (final exam would be worth **200pts**); **PROVIDED** that acceptable documentation of the absence is presented to the professor. Without a legitimately documented reason, a grade of **0** will be assigned. **You *must* take the cumulative final exam to receive a passing grade in the course.**

How to Study for this course? Silence your cell phones. ***Keep your textbook, scientific calculator and periodic table available during class.*** If you don't understand something ask me during question-answer time in class, or seek the help of free tutoring offered by the college and chemistry department. Quizzes are designed to help you understand the material. If you take all quizzes by coming to class on time and staying till the end of class, you can perform very well in the exams.

Course Grading:

Two class exams and one final exam: 65%
Quizzes: 20%
Homework: 15%

To be fair to all students, absolutely no extra credit assignments will be given to improve one's grade. Letter grades follow the college guidelines.

Do not cheat during quizzes and exams. All violations will be reported and appropriate actions as per college guidelines will be taken.

This policy and others related to candidates' issues are available to you at:
http://www.qc.cuny.edu/StudentLife/Documents/AcademicIntegrityPolicywithoutmemo.pdf

The instructor will not give advice on rules, deadlines, and financial aid consequences of any letter grade. A grade of INC should not be requested by student to avoid F or WU in the transcript.

REASONABLE ACCOMMODATIONS FOR CANDIDATES 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 to me 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, contact: Special Service Office; 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 p.m.).

Chemistry and Biochemistry Department, Queens College- CUNY

CHEM 1011- Basic Chemistry Lab (SPRING 2023)

Section Number: Tuesday 6:30pm- 9:20pm

Instructor's Full Name: Abderrahim Chouaib

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

Instructor's Office Hour: Wednesday 6 :30 pm

Textbook for the course: No charge to student and it is posted on course blackboard.

Other required items: A scientific or graphic 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 1013

Coordinator: Prof. Iva Burdett (Iva.Burdett@qc.cuny.edu)

[Note : Student 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 Queens College campus in Remsen 156 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.

II. 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.

III. Laboratory Manual

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

IV. Grading:

Each lab is graded for 100 points distributed as follows - 15% Prelab Questions; 70% Lab Report; 15% post-lab. All laboratory experiments are to be performed **individually** (and evaluated by the instructor). There are **no** teamexperiments. Each person registered for lab is to perform each laboratory experiment individually.

A. There are pre-labs, lab write-ups, report sheets, and post-lab questions for all experiments performed. Bring the lab write-ups for each scheduled lab. Students who fail to bring the lab write-up for the scheduled lab to class will not be permitted to enter the lab.

B. A pre-lab activity, posted on **Blackboard**, 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 laboratory is to be recorded directly on your report sheets. Only Report Sheets provided by the instructor will be accepted for grading. The Report Sheet for each experiment is due at the beginning of the next lab class following the completion of the lab experiment. The first ten-point penalty will be applied to lab reports that submitted after the lab class time when they are due. Lab reports more than two (2) weeks late will not be accepted. 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. Each lab experiment will have a post-lab activity posted on **Blackboard**. Each post-lab is due before the nextscheduled lab (generally one week later).

V. Other Important Information

(i) 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.

(iv) 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.

(v) 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."

(vi) 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 needfor 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.).

(vii) 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/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.

Week	Date	Experiment
1		Check-in, Safety Video, #1 – The Bunsen Burner
2		#2 – Laboratory Measurements
3		#3 – Conversion Factors
4		#4 – Density
5		#5 – Determination of the formula of a Metal Oxide
6		#6 – Water of Hydration
7		#7 – Chemical Reactions Part 1: Combination and Decomposition Reactions
8		#8 – Chemical Reactions Part 2: Single and Double Replacement Reactions
9		#9 – Calorimetry
10		#10 – Kinetics
11		#11 – Equilibrium
12		#12 – Charles's Law
13		#13 – Analysis of Vinegar by Titration
14		Check-out

Queens College, CUNY Department of Chemistry and Biochemistry
Professor Edward G. Look, Laboratory Coordinator **Spring 2023**

CHEM 114.1- General Chemistry II Laboratory

Section **2**- **Tuesdays** 1:40 – 4:30 PM, 153 RE

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

Laboratory Syllabus

I. General Laboratory Rules (When In-Person)

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

II. Laboratory Manual: **posted on BlackBoard**

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 Blackboard; 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.
C. **Format:**

1. ***Heading:*** Always be sure ***your name, section number, experiment title AND date the experiment was performed*** is included.
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.

IV. Grading

A. Late reports *are not acceptable* and your instructor will deduct up to or at least 50% off the report.

B. Reports will be graded *also* for conformance to the above described *format*; the apportionment of points to be determined by your instructor.

C. Your instructor **may** drop *one* report, of the lowest grade, from your totals.

D. 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 your instructor
   3. efficiency- your ability to correctly and quickly accomplish the experiment
   4. effectiveness- and of course, how well the results turned out

V. Laboratory Requirements:

A. **PRE-LAB: Write, in your own words, the theory and procedure for the experiment in your notebook before coming to lab.** Therefore, all notes must be preceded by the pre-lab. Consult the experiment schedule in §IX below for the 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 American Chemical Society lab safety video during the first lab. If you missed it, you must immediately arrange with the Chemistry Stockroom to watch it.

E. You **must** have safety goggles, a lab coat and a combination lock; ***we** will issue these to you*.

F. 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***; do not take any notes on scrap paper or other things. Either is available through the QC online bookstore.

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 copy with you.

VII. Safety:

APPROVED MASKS COVERING NOSE AND MOUTH, goggles, 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, 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, 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 this semester, regardless of whether you have seen it before. If you miss it, tell your instructor to arrange a session for you as soon as possible.

VIII. 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. 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. You may not allow non-class members to log in during synchronous sessions.

IX. 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
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**

X. If You Might Have COVID-19:

If you even just believe you may have COVID-19 (or the flu), ***please stay home and do not come to campus***, inform Mr. Alejandro Mendez at alejandro.mendez@qc.cuny.edu and me, and we can work with you with respect to the course material.

Syllabus Chem 102.3-2 Lecture Schedule Spring 2023

Queens College of the City University of New York

Dept. of Chemistry and Biochemistry

Class Chem 102.3 Basic Organic Chemistry

Dr. Gloster e-mail: daniel.gloster65@login.cuny.edu

Basic Organic Chemistry Syllabus

Our IN-PERSON CLASSROOM…..Remsen Room 017-----WEDNESDAY 6:30-9:20

OFFICE HOUR ------WEDNESDAY 5:30-6:20 Remsen 206 and by appointment

Chem 102.3-2 Lecture Schedule Spring 2023 Course Requirements:

Prerequisites for Chem 102.3: C or better in Chem 101.3 and 101.1, or C or better in Chem 113.4 and 113.1F

Pre or corequisite: Chem 102.1 (C or better if prerequisite)

Note: a C- in any prerequisite will not permit you to take 102.3/102.1!

You must earn a C or better in Chem 102.3 and 102.1 to take Chem 103.3 and 103.1

You will need access to Blackboard for handouts - it is your responsibility to provide a valid e-mail address that you monitor. Announcements will be made via Blackboard and e-mail.

Required: LECTURE TEXT: *Fundamentals of General, Organic, and Biological Chemistry*, McMurry, Hoeger, Peterson, and Ballantine, 8th Edition, Prentice Hall, 2017

ISBN -10: 0134015185 Search for the Highlighted Portion and You'll find it
ISBN-13: 9780134015187

Recommended: *Study Guide and Selected Solutions Manual*, McMurry, 8th Edition
Recommended:Molecular model kit (from Amazon for about $25 look fine.)

ISBN -10: 0134261372 Search for the Highlighted Portion and You'll find it
ISBN-13: 9780134261379

REQUIRED ON-LINE PROBLEMS: You are required to purchase access to the Sapling Learning on-line problem website for this course. The cost is $50 and you have a two week window to complete your purchase.

Homework deadlines are fixed and CANNOT be changed

STUDENT INSTRUCTIONS

- Go to https://achieve.macmillanlearning.com/courses/zr8737 and log in (if you have used Achieve) or create an account (if you are a new user).
- If you are creating a new account, please be sure to check your email for your account confirmation

- Upon logging in, you will need to decide if you'd like to Purchase Achieve Access online, Enter an Access Code from your campus bookstore, or enter on a two week free trial period.
- After you've made your payment selection, you will complete your registration and enter your course.
- **Need More Detailed Instructions?** Please visit our Getting Started Guide for Students: https://macmillan.force.com/macmillanlearning/s/article/Achieve-Getting-Started-Guide for-Students
- **Need Technical Support?** Fill out this form to contact Macmillan Customer Support via email, chat, or phone: https://macmillan.force.com/macmillanlearning/s/contactsupport

- Direct phone number: 1-800-936-6899

Homework deadlines are fixed and CANNOT be changed

Grading

3 Midterm Exams 60% (600 points…3 exam 200 points each)
On-line Homework 10% (100 points….homework)
Final Exam (Comprehensive*) 30% (300 points cumulative exam)
Total 100% (1000 points)

You must work at home. You have access to my slides and you should come prepared.

The final exam

Will cover all of the chapters listed in the syllabus.

Exam and Exam Make Up Policy

Exams will stress lecture material and On-Line homework problems.
Bring photo ID to exams.

You will not be permitted to use books, molecular models, notes, computers, or calculators during exams.

Cell phones are strictly prohibited for class and exams. Use of a cell phone is a form of cheating and you face academic discipline.

If you have any questions concerning the grading, see Dr. Gloster within 10 days following the exam.

If you are ill or there is an emergency, you must notify me by email before the exam. Written verification of your reason for missing an exam is required within 10 days; if your absence is excused you will be given an opportunity to make up that exam. You may also be given the opportunity to miss that exam and have your exam grade determined by the average of your other semester exams. If your absence is unexcused you will be awarded a zero for that exam which will count into your final grade.

You must take the final exam. If you are ill during this time you must apply for an incomplete with proper medical notes. If your incomplete is granted, you MUST take your final exam NO LATER THAN the next semester's scheduled final exam.

APPROXIMATE SCHEDULE AND OPTIONAL PROBLEMS. The text contains many problems similar to those that will be given on exams. You should do the problems that appear in the body of the text. Selected answers may be found in the Study Guide; there will not be any graded homework other than the on-line Sapling homework. The following are the Additional Problems at the end of each chapter for which you are responsible, along with *approximate* scheduled lecture topics and *expected* topics for each exam.

Approximate Schedule and Problems

Date	Chpt	Topic	Problems (Optional—I don't collect or grade these)
Jan 25,	12	Alkanes	12.22-32, 36, 37, 39, 40, 42-44, 46-53, 58, 62-64a, b, 65
Feb 1,	13	Alkenes, Alkynes, Aromatics	13 30, 32, 35-39, 42, 48, 50, 58-61, 65, 66-68, 69-70, 72, 74, 75, 79, 80, 82
Feb 8 ,	14	Compounds with Oxygen, Sulfur, or a Halogen	14.21-29, 32a-d, 34, 35, 38, 40-52, 58, 63, 69-70
Feb 15,	15	Aldehydes and Ketones	15.20-23, 25-32, 34-44, 51, 58, 59
Feb 22,	**Exam 1 Chapters 12, 13, 14 Online H-work (12, 13, 14) due 2/22 at 5:59 PM**		
Mar 1,	16	Amines	16.23-25, 28-31, 34, 37-38, 41-42, 47, 55, 57
Mar 8,	17	Carboxylic Acids and Derivatives	17.37, 43, 44, 46, 48, 54, 58, 62, 69, 72-74
Mar 15,	18	Amino Acids and Proteins	18.36, 37, 41, 46-49, 56, 66, 70, 72,
Mar 22,	**Exam 2 Chapters 15, 16, 17 Online Hwork (15, 16, 17) due 3/22 at 5:59 PM**		
May 29,	20	Carbohydrates	20.28, 29, 32, 35-37, 44, 46, 50, 51-58
Apr 19,	23	Lipids	23.30-33, 37, 38, 48, 49, 50, 60
Apr 26,	26	Nucleic Acids	26.23, 24, 26, 29-32, 50
May 3 ,	Catch-up (last lecture)		
May 10, 5:59 PM	**Exam 3 Chapters 18, 20, 23, 26 (last class) Online H-work (18, 20, 23, 26) due 5/10**		
May 17 ,	**In Class Final Exam – ALL CHAPTERS 6:15-8:15 Same Room RE 017**		

Course Objectives: Students will learn basic structural organic chemistry, including structures and nomenclature of hydrocarbons and compounds containing the most common functional groups including halides, alcohols, thiols and disulfides, amines, carbonyl compounds including aldehydes, ketones, carboxylic acids, esters, and amides, and an introduction to biological molecules including amino acids, proteins, carbohydrates, lipids, and nucleic acids. Stereochemistry will be introduced, and students will learn to draw structures and convey three dimensional information about structures. Reactions of these compounds will be introduced, but mechanisms of reactions, synthesis, and spectroscopy will not be covered in this course. At the conclusion, students will have a foundation that will allow them to enter a course in basic molecular biochemistry.

Assessment: Problem solving ability will be tested using exams; while memorization of naming conventions and reactions will be required, the emphasis will be on understanding structures of organic compounds. 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

A+ 97-100
A 93-96
A- 90-92

B+ 87-89
B 83-86
B- 80-82

C+ 77-79
C 73-76
C- 70-72

D+ 67-69
D 60-66

F 0-59

Chem 321 (1 to 3 cr) PRACTICUM IN CHEMICAL EDUCATION Spring 2023

Instructor: Dr. Gopal Subramaniam email: gopal.subramaniam@qc.cuny.edu

Office: Remsen 206 Tel: (718) 997-4123 Office hours: 11:00 am - 12:00 pm, W

Laboratory Hours: Fridays 9 to 12:30, Remsen 015 OR by mutual agreement. Students taking more than 1 credit are required to do additional work which are arranged by mutual consent. Lab hours are flexible and can be arranged by mutual consent with instructor.

Course Content: A project based laboratory for students in Chemical Education. This course is also open for students majoring in Chemistry who wish to improve their hands-on performing skills for educating non-chemists.

Pre-Requisites: Students must have completed 2 semesters of organic chemistry (equivalent to Chem 251 and 252 at Queens College) including 2 credits of organic chemistry laboratories intended for chemistry majors.

Goals/Objectives: Ability to perform chemical demonstrations in a safe manner in front of an audience. An understanding of the development and application of chemical demonstrations and laboratories in an educational setting.

Text: Lecture Demonstration Manual – Compiled by Thomas Hayden (III) and Randolph Smith, Queens College. A copy of this manual is available in the lab.

In addition, students must read articles from Journal of Chemical Education and also refer to online resources for chemical demonstrations relevant to introductory chemistry classes.

Schedule

Laboratories: There are 15 weeks during a semester. The projects performed during these weeks will be scheduled during the first week in consultation with the instructor and will be consonant with the number of credits that a student is registered for. Demonstrations covering density, temperature, absolute zero, exothermic and endothermic reactions, acid-base reactions, light, etc. are some of the typical topics covered in the first year

chemistry curriculum and hence forms part of the demonstration schedule. You will be given a 2-week advance notice of the upcoming lecture and the demonstrations needed for the class. Relevant reading from the lab manual and online resources must be completed and appropriate procedures must be written before carrying out the demonstration for practice. There is always room for innovation and that is expected from you. Think about safety, waste reduction, and non-toxic (green chemistry) materials while you plan for modifications. These are the basis for your original lab report. Your initial practice is in the lab without an audience so that you can confirm the methods and feel confident about the demonstration. The next lab session will feature the demo in front of an audience. You must have written instructions for performing the lab with a lesson plan in front of an audience. The final lab report should contain all the details including safety precautions, difficulties and outcome while performing in front of an audience and audience reactions wherever applicable.

Students who take the course for more than 1 credit: In addition to demonstrations, you may be given projects to test new labs, lesson plans, surveys, etc. Students testing new laboratories or performing research in chemical education will be required to present their results at the Chemistry Undergraduate Research Day. Good sources for such work include: New York Times Science section, Scientific American, Discover, Science, Nature, Synchrotron Radiation News, Photonics, Laser Focus World, Physics Today, Chemical and Engineering News, Journal of Chemical Education, and the standard scientific literature. You are required to report every week and discuss with the instructor while completing the additional work. As a general rule, every laboratory credit hour will require 4 hrs of work.

Safety: You must wear eye protection at all times while in the laboratory or in class performing an experiment or demonstration. Failure to do so will result in ejection from the laboratory. Students will be given a safety/laboratory technique, access to MSDS database, and the opportunity to take C14 exam given by New York City Fire Department. Everyone taking the course for more than 1 credit will be required to complete the Laboratory Certificate of Fitness (C14).

Grade: The grade will be determined from writing lesson plans, the final comprehensive report, and the actual presentations. Equal weighting is given for all 3 pieces.

Note that students doing for more than 1 credit of Chem 321 are expected to solicit and get student's feedback from the classes where they did demonstrations. These include writing survey questions, getting feedback and analyzing. Since these require planning, continuous discussion with instructor is necessary to fulfill all the requirements. There will be a grade penalty if this student feedback piece is not included in the final writeup.

SYLLABUS FOR CHEM395 SPRING 2023

OFFICIAL COURSE NUMBER: SENIOR THESIS

General Information:

Queens College

Department of Chemistry and Biochemistry

Chem 395

Building and Room Number: TBA

Instructor name and contact information (office phone and e-mail address, as well e-mail policy).

Gopal Subramaniam, 718-997-4123, Gopal.Subramaniam@qc.cuny.edu

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Course Description:

A senior thesis requires the permission and supervision of a faculty mentor. This course is taken by the student after completing one or more upper level (300 level) chemistry courses. Under the supervision of a faculty mentor, student chooses a research project or literature review connected to their research interests and draft a thesis. Substantial amount of time is spent in reviewing existing literature, organizing information to form a coherent narration of findings, reviewing, and revising with mentor support for language, clarity, and style expected in the scientific discipline. Upon completion of the thesis, an oral presentation is required. In addition to mentor, thesis and presentation will be graded by at least one other faculty member chosen by the mentor.

This course is writing intensive and requires 20 pages or more of scientific writing excluding figures and tables. There will be extensive revisions required by the mentor over the course of the semester before the final draft is submitted at the end of the semester. In addition, an oral presentation is required at the end of the semester.

Textbook Information:

The ACS Style Guide: Effective Communication of Scientific Information (An American Chemical Society Publication) 3rd Edition by Anne M. Coghill (Editor), Lorrin R. Garson (Editor) ISBN: 978-0841239999

This course also uses free materials available through Queens College and CUNY library systems and course mentor's collection of research articles and books.

Attendance Policy:

Students must meet their faculty mentor and/or other research students in the laboratory for a minimum of 3 hrs/week.

Discipline/Course Specific Learning Objectives:

1. Search literature through online services like scifinder, google scholar, etc.
2. Request articles through online sources like library subscription.
3. Organize information from various sources used along with proper reference for using in a thesis.
4. Plan the sections and logical flow for drafting a thesis with appropriate scientific language in the discipline.
5. Write, revise, and re-revise with input from reviewer(s) for informational clarity, logical flow, and grammar.
6. Oral presentation and defending work in front of a scientific audience.

Writing statement:

- Anticipated for Future semesters only - This course is a Writing Intensive (W) course and fulfills one Writing Intensive requirement. W classes include a huge portion of time devoted to writing instruction, revision, discussions of rhetorical strategies, and reflective writing about writing assignments.

Course Activities Calendar:

This course requires substantial amount of independent work outside of meeting time with mentor. Topic of research and writing is primarily student's work with substantial mentor input. Hence constant meetings with mentor are necessary and a grade for attendance is suggested. However, course grading guidelines as well as written assignment guidelines are general and subject to modification by mentor as it applies to the topic and sub-discipline. A written thesis of 20+ pages and oral presentation are mandatory requirements for completing the course.

Class Meeting	Topic	Readings/Assignments	Objectives/ Criteria Met
Week 1	Research topic and gathering data, formulating a time map for research writing, avoiding plagiarism. Preparing and presenting a scientific work – Using figures effectively and keeping notes to say on a topic.	Use ACS style guidebook to map out the style used in the article assigned by the mentor. Make a list of seminars (department seminars as well as other opportunities linked to topic given outside chemistry department) to attend during the semester.	

Week 2	Research writing discussion Rhetorical analysis of a written review article and gathering data from papers.	Use online database(s) to get research articles and take notes from articles	2 hours of writing instruction and rhetorical analysis
Week 3	Discussing a rough draft of thesis on the chosen topic. Expanding on the article searches to gather more data necessary to complete thesis	Formulate a map with sections and briefs for what should go in the sections. Prepare a list of major references for the topic and abstracting ideas from journals.	Additional hours of writing instruction
Week 4	Discussing the first draft and plan the work.	Separate the task for writing sections and organize data	Evaluated writing plan of 3 pages of more
	Graded Activity [10%]	Prepare and submit first draft	
Weeks 5 to 8	Improving the draft with feedback for each section. Reflective analysis of writing and planning expanded writing	Insert figures and tables, number them, reference them in the text for clarity.	Evaluated writing of 5 to 10 pages of writing in the field. Reflective analysis and logical flow.
	Graded Activity [10%]	Expand second draft with 5 to 10 pages of material	
Weeks 9 to 12	Improving the logical flow with introduction, data analysis, and major outcomes. Analyzing the written work for compliance with ACS style guide.	Submit final draft of 20+ pages of written material after substantial revisions, Submit for final evaluation by mentor at week 12	Evaluation and feedback for 5000+ words of written material. Compliance to scientific style.
Week 13	Revision practices – Rereading and checking spelling, grammar, acronyms, run-on sentences, vocabulary, plagiarism, and formatting. Discussion of oral presentation	Complete draft for graded thesis. Prepare oral PowerPoint presentation applying the principles learned from attending scientific presentations. Practice for content and time and follow it up with a practice in front of a mentor,	Instructions for final presentation - Oral and Written
Week 14 -15	Final thesis and Oral presentation	Both mentor and another faculty member grade oral and written work*	

Course Grade:

Attendance and weekly participation as laid out in the syllabus: 10%

Evaluation of first draft of work at week 4-5: 10%

Evaluation of second draft of work at week 8-9: 20%

Final draft and oral presentation: 60% [*final draft and oral presentation are graded by mentor and at least one other faculty member chosen by the mentor. Grade is weighted equally from all these parts: (i) concise introduction that lays out the foundation and importance of the topic (ii) figures and tables uniformly referenced and referred to in the text with data analysis (iii) following the ACS style guide for all sections of material and (iv) oral presentation and defense.

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1011- Basic Chemistry Lab (Spring 2023)

Section Number: ___101.1/1 [34730] _____

Instructor's Full Name: ___Iva Burdett_____

Instructor's Email: __iva.burdett@qc.cuny.edu _____

Instructor's Office Hour: _Thursdays 1-3pm in RE 206A_____

Textbook for the course: No charge to student and it is posted on course blackboard.

Other required items: A scientific or graphing calculator is required and can be purchased anywhere. Note that lab coat, safety goggles, and required glassware are provided upon checkin.

Pre-Requisite/Co-Requisite: Chem 1013

Coordinator: Prof. Iva Burdett (iva.burdett@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 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. If you cannot attend the lab due to the COVID quarantine requirement, a COVID test record must be provided afterwards.

D. Attendance will be taken at___1:40pm___. Due to safety concerns, any student that arrive after 2:00pm____ 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 effective 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 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.

IV. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on the BlackBoard in the Content Section. **V. Grading**:

Each lab is graded for 100 points distributed as follows - 15% Prelab Questions; 70% Lab Report; 15% post-lab. 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.

A. There are pre-labs, lab write-ups, report sheets, and post-lab questions for all experiments performed. Bring the lab write-ups for each scheduled lab. Students who fail to bring the lab write-up for the scheduled lab to class will not be permitted to enter the lab.

B. A pre-lab activity, posted on **Blackboard**, 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 laboratory is to be recorded directly on your report sheets. Report sheets can be located at the end of each lab write-up document (located under the content tab in Blackboard). Each student must print their own lab write-up. 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. Missed labs with appropriate documentation will not be counted in the final grade. The grade will be assigned based on the performance in the rest of labs. However, absence without documented excuses will result in a zero grade for that lab, which will be averaged into your overall grade. If you have attended all the labs without any **unexecuted** absences, one lowest scored lab sheet will be dropped from your final lab reports average.

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

VI. Other Important Information

(i) 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.

(iv) 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.

(v) 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."

(vi) 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.).

(vii) 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/legalaffairs/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	01/31/23	Check-in, Safety Video, #1 – The Bunsen Burner
2	02/07/23	#2 – Laboratory Measurements
3	02/14/23	#3 – Conversion Factors
4	02/21/23	**NO LAB, CLASSES FOLLOW MONDAY SCHEDULE**
5	02/28/23	#4 – Density
6	03/07/23	#5 – Determination of the formula of a Metal Oxide
7	03/14/23	#6 – Water of Hydration
8	03/21/23	#7 – Chemical Reactions Part 1: Combination and Decomposition Reactions
9	03/28/23	#8 – Chemical Reactions Part 2: Single and Double Replacement Reactions
10	04/04/23	#9 – Calorimetry
11	04/11/23	**NO CLASS, SPRING RECESS**
12	04/18/23	#10 – Kinetics
13	04/25/23	#11 – Equilibrium
14	05/02/23	#12 – Charles's Law
15	05/09/23	#13 – Analysis of Vinegar by Titration
16	05/16/23	Check-out

Department of Chemistry and Biochemistry
Queens College CUNY
Tentative Lecture Schedule for Chemistry 101.3, Section 01, Spring 2023

REQUIRED MATERIAL: *General, Organic, & Biological Chemistry, 5th edition by Janice Smith.* You will also need online HW access. Go to https://www.aleks.com/sign_up and plug in the code KTW4U-3KE6V **this is the code just for your section**. Then you can purchase an ALEKS 360 account (homework) with eBook access **(MUST BE 18 weeks access) from QC bookstore**. If you already have the book, buy only Aleks for GOB Online HW access. If you plan on taking 102 and 103, consider buying a 52-week access since it is most likely the same book used for all 3 classes (totally optional).

Class Hours: Lecture/Recitation: T,Th 10:45am-12:00pm
Instructor: Iva Burdett, PhD Room: RE 206A
Office Hours: Thursdays 1-3pm, or by appointment

Email: iva.burdett@qc.cuny.edu
Lecture: In-person
Exams: In-person

DAY	TUE/THU	TOPIC
Thu	26-Jan	Intro, Syllabus
T	31-Jan	Ch1 Matter and Measurements (Part 1)
Thu	2-Feb	Ch1 Matter and Measurements (Part 2)
T	7-Feb	Recitation Ch 1
Thu	9-Feb	Ch2 Atoms and the Periodic Table
T	14-Feb	Ch2 Atoms and the Periodic Table
Thu	16-Feb	Recitation Ch 2
T	21-Feb	**NO CLASS**
Thu	23-Feb	Ch3 Ionic Compounds, **Quiz #1 (Ch 1 & 2)**
T	28-Feb	Recitation Ch 3
Thu	2-Mar	Ch 4 Molecular compounds
T	7-Mar	Recitation Ch 4
Thu	9-Mar	Ch 5 Classification & Balancing of Chem. Reactions, **Quiz #2 (Ch 3 & 4)**
T	14-Mar	Recitation Ch 5 pt 1
Thu	16-Mar	**Exam #1 (Ch 1-4), 50 min.**
T	21-Mar	Ch 5 Chemical Reactions: Mole and Mass Relationships
Thu	23-Mar	Recitation Ch 5 pt 2
T	28-Mar	Ch 6 Energy Changes, Reaction Rates, and Equilibrium
Thu	30-Mar	Recitation Ch 6
T	4-Apr	Recitation Ch 6
Thu	6-Apr	**NO CLASS**
T	11-Apr	**NO CLASS**
Thu	13-Apr	**NO CLASS**
T	18-Apr	Ch 7 Gases, Liquids and Solids, **Quiz #3 (Ch 5 & 6)**
Thu	20-Apr	Ch 7 Gases, Liquids and Solids
T	25-Apr	Recitation Ch 7
Thu	27-Apr	**Exam #2, (Ch 5-7) 50 min.**
T	2-May	Ch 8 Solutions
Thu	4-May	Recitation Ch 8
T	9-May	Ch 9 Acids and Bases, **Quiz #4 (Ch 7 & 8)**
Thu	11-May	Recitation Ch 9
T	16-May	Final Exam Review
TUE	**23-May**	**Final Exam, (Ch 1-9) 2 hours, 11:00am-1:00pm**

Grading. Your final score is based on the following calculation:

ALEKS Online Homework: 30%; Recitation Quizzes: 10%; Complete set of notes from class 10%; Midterm exams: 25%; Final exam: 25%. ***Please note****: A final grade of "C" or better is required to continue on to Chem 102.*

- Homework assignments must be completed by the due date online using the ***ALEKS Online Homework Program***, Go to **https://www.aleks.com/sign_up** course code: **KTW4U-3KE6V**. The following financial aid code will grant you free access for the first two weeks after which you must purchase an ALEKS package: **5D0F0-DB381-54454-0FB42**
- **The Financial Aid Access Code does not add an additional two weeks to your account.**
- **NOTE: This code gives you temporary access to ALEKS for a two-week period. Once the code expires, you will be locked out of your ALEKS account until you purchase a regular Student Access Code. It is highly recommended that you purchase the Student Access Code BEFORE the two weeks expire to prevent interruptions with your ALEKS account.**
- **1. To log into ALEKS using the Financial Aid Access Code, go to: http://www.aleks.com.**
- **2. Click on the "SIGN UP" link located in the menu at the upper-right of the page.**
- **3. Enter your Class Code in the box and click on "Continue."**
- **4. Verify that you are registering for the correct class and click on "Confirm."**
- **5. Continue with the registration process until your account has been set up successfully.**
- **6. On the Apply Access page, enter the 20 character Financial Aid Access Code and click "Continue."**
- **7. Next you will see a page with the date your temporary access expires, click "Continue."**
- **8. You will arrive at the My Classes page.**
- **9. You can extend your access to your new class at any time by selecting "Extend access" from the class tile menu and enter your new access code. You do not need to create a new ALEKS account to continue your class.**
- **Enjoy your class.** See accompanying chart for ALEKS assignment due dates.

- Four quizzes will be administered throughout the semester. The best three of the four quiz grades will be used to calculate your overall quiz grade. There will be no make-ups for missed quizzes.
- Any questions on grading must be given in writing within one week of receipt of answer scripts. However, making any marks directly on graded answer scripts will nullify your request.
- No makeup is given for missed midterm exams. If you miss one exam, your final exam score will be duplicated to replace the missed exam score.
- Note: Bring a scientific calculator to all classes and exams.

GENERAL

Chemistry 101.3 is a one semester, basic chemistry course roughly equivalent in caliber to the Regents Chemistry course taught in high schools within New York State. The course serves as a foundation for students who will go on to take Organic (Chem 102) and Biochemistry (Chem 103). A grade of C or higher is required to register for these courses. The course meets for 3 credit

hours and includes both the recitation and lecture. The laboratory course, Chem 101.1 is a separate corequisite for Chem 101.3 and is administered and graded separately.
In chemistry 101.3, the student will develop an understanding of basic atomic structure, including the rationale for the formation of ions and molecules. Students will learn basic skills involved in making measurements, understand the scientific method, stoichiometry, solution chemistry, equilibrium, and acid-base chemistry. Students will master gas laws and develop and understanding of the energetics of chemical reactions.

LECTURE

Students are expected to attend all lectures. ***During the Fall 2022 semester, lectures will be conducted in-person. Any changes due to unpredictable events will be posted in the Announcements section on CUNY Blackboard. It is the student's responsibility to check emails and announcements pertinent to the class.*** Prior to each lecture, the students are expected to read the material in the textbook and be familiar with the concepts in the readings. The purpose of the lecture is to summarize the material, highlight important concepts, and provide illustrative examples of these concepts including solving typical problems. The attached lecture schedule is tentative and any variations which may arise will be addressed in class during lecture and via Blackboard postings.

Problem solving is a critical aspect of this course. By working to solve problems, students will come to better understand and master the various concepts. Homework assignments on the ALEKS online homework system are designed to provide instructional support of the course material but are also a significant (30%) component of the final grade. I encourage students to work in groups to solve problems; however, you must do the final entry to the homework system yourself.

RECITATION

Recitation is designed as a problem solving session and is incorporated into the lecture. Questions regarding lecture topics, homework problems, or worksheet exercises are welcomed at the beginning of lecture. Students are expected to participate in recitation by coming prepared to solve problems and/or ask questions regarding the solutions to problems indicating that they have arrived at a partial solution prior to recitation. There will be **4 quizzes** administered during lecture. The best 3 of the 4 quizzes will be used to determine your quiz average and will be used to provide 10% of your course grade.
All exams will be taken on the Queens College campus unless CUNY guidelines change during the semester. You must comply with the guidelines at the times of the exams to gain access to the campus. Specific instructions on how exams will be administered will be provided in lecture. ***Each student must have a scientific calculator and photo ID for each exam.***

CLASS POLICIES

Attendance: You are required to attend all exams, lectures, and recitations and to arrive promptly at the start time. NO MAKE-UP QUIZZES OR EXAMINATIONS will be provided. It is your responsibility to contact the lecturer (Dr. Burdett) BEFORE the meeting if you cannot be present for an exam or quiz. If using email, notification a MINUMUM of 3 hours prior to the meeting is required. WRITTEN documentation (i.e. Doctor's note) is then required at the next class meeting to avoid a grade or ZERO (0). **If you will be absent due to a religious observance, please notify Dr. Burdett in writing, at least 1 week before.**

Note also that all on-line homework assignments will have a deadline date.

Academic Dishonesty: Academic dishonesty is one of the most serious offenses within the academic community. Acts of academic dishonesty include, but are not limited to, plagiarism and/or cheating on exams and papers, including sharing and/or copying responses on assessments via electronic means, sabotage of research materials, the purchase or sale of academic papers, and falsification of records. Any student who engages in an activity that is academically dishonest is subject to disciplinary charges, as is any student who knowingly aids another who engages in them. 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/.

MEDIA AGREEMENT DURING ZOOM OR OTHER ONLINE PLATFORM MEETINGS

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.

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.).

FAQ

1. *How do I prepare for each Chem 101 lecture/recitation class?*

   - Bring a pencil or pen, a notebook, or a tablet to write on. Have the textbook and a scientific calculator with you during class.
   - Read the textbook chapter to be covered during lecture prior to class.
   - Complete the ALEKS Online homework objectives by the due date. For additional practice problems, try the posted worksheets or textbook problems for each chapter. Note the problems that you had trouble with and/or would like to focus on during recitation.

2. *How do I study for Chem 101?*
   - Learn how to use a scientific calculator. Practice basic mathematical skills involving decimals, fractions, exponents, and percentages.
   - Read the textbook before (or at least after) attending the lecture.
   - Make short summary notes or an outline for each chapter. Allocate time to reread old chapter summaries even as we progress to newer chapters. Constant repetition is necessary to remember Chemistry!
   - Practice assigned problems first and practice more from the book if possible. Look into the solution manual or get help only if you cannot solve on your own after several attempts.

3. *How can I contact you if I can't come during office hours?*

You can send me email. I will try to answer your question ASAP or suggest some alternate time to meet you. If you did not get email response within one business day, ask me in person before or after the scheduled class.

4. *I am failing in this course despite studying a lot. Can you help me?*

If you wish to discuss your performance in this course, you must bring with you all your handwritten notes, solutions to assigned problems, and other evidence to show that you studied hard for the course. After analyzing your methods of studying, I can suggest improvements.
I cannot help those who do not have the time to complete these minimum required tasks in this course.

5. *Do you curve exam/quiz scores?* NO

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Department of Chemistry and Biochemistry
Queens College CUNY
Tentative Lecture Schedule for Chemistry 101.3, Section 02, Spring 2023

REQUIRED MATERIAL: *General, Organic, & Biological Chemistry, 5th edition by Janice Smith.* You will also need online HW access. Go to https://www.aleks.com/sign_up and plug in the code 3TC3N-D6P6N **this is the code just for your section**. Then you can purchase an ALEKS 360 account (homework) with eBook access **(MUST BE 18 weeks access) from QC bookstore**. If you already have the book, buy only Aleks for GOB Online HW access. If you plan on taking 102 and 103, consider buying a 52-week access since it is most likely the same book used for all 3 classes (totally optional).

Class Hours: Lecture/Recitation: M,W 3:45pm-5:00pm
Instructor: Iva Burdett, PhD Room: RE 206A
Office Hours: Thursdays 1-3pm, or by appointment

Email: iva.burdett@qc.cuny.edu
Lecture: In-person
Exams: In-person

DAY	MON/WED	TOPIC
Wed	25-Jan	Intro, Syllabus
Mon	30-Jan	Ch1 Matter and Measurements (Part 1)
Wed	1-Feb	Ch1 Matter and Measurements (Part 2)
Mon	6-Feb	Recitation Ch 1
Wed	8-Feb	Ch2 Atoms and the Periodic Table
Mon	13-Feb	**NO CLASS**
Wed	15-Feb	Ch2 Atoms and the Periodic Table
Mon	20-Feb	**NO CLASS**
Tue	21-Feb	*****TUESDAY CLASS *** Recitation Ch 2**
Wed	22-Feb	Ch3 Ionic Compounds, **Quiz #1 (Ch 1 & 2)**
Mon	27-Feb	Recitation Ch 3
Wed	1-Mar	Ch 4 Molecular compounds
Mon	6-Mar	Recitation Ch 4
Wed	8-Mar	Ch 5 Classification & Balancing of Chem. Reactions, **Quiz #2 (Ch 3 & 4)**
Mon	13-Mar	Recitation Ch 5 pt 1
Wed	15-Mar	**Exam #1 (Ch 1-4), 50 min.**
Mon	20-Mar	Ch 5 Chemical Reactions: Mole and Mass Relationships
Wed	22-Mar	Recitation Ch 5 pt 2
Mon	27-Mar	Ch 6 Energy Changes, Reaction Rates, and Equilibrium
Wed	29-Mar	Recitation Ch 6
Mon	3-Apr	Recitation Ch 6
Wed	5-Apr	**NO CLASS**
Mon	10-Apr	**NO CLASS**
Wed	12-Apr	**NO CLASS**
Mon	17-Apr	Ch 7 Gases, Liquids and Solids, **Quiz #3 (Ch 5 & 6)**
Wed	19-Apr	Ch 7 Gases, Liquids and Solids
Mon	24-Apr	Recitation Ch 7
Wed	26-Apr	**Exam #2, (Ch 5-7) 50 min.**
Mon	1-May	Ch 8 Solutions
Wed	3-May	Recitation Ch 8
Mon	8-May	Ch 9 Acids and Bases, **Quiz #4 (Ch 7 & 8)**
Wed	10-May	Recitation Ch 9
Mon	15-May	Final Exam Review
TBD	17-23 May	**Final Exams, (Ch 1-9) 2 hours, date TBA**

Grading. Your final score is based on the following calculation:

ALEKS Online Homework: 30%; Recitation Quizzes: 10%; Complete set of notes from class 10%; Midterm exams: 25%; Final exam: 25%. ***Please note****: A final grade of "C" or better is required to continue on to Chem 102.*

- Homework assignments must be completed by the due date online using the ***ALEKS Online Homework Program***, Go to **https://www.aleks.com/sign_up** course code: **3TC3N-D6P6N**. The following financial aid code will grant you free access for the first two weeks after which you must purchase an ALEKS package: **77822-3D6CD-A8750-62039**
- **The Financial Aid Access Code does not add an additional two weeks to your account.**
- **NOTE: This code gives you temporary access to ALEKS for a two-week period. Once the code expires, you will be locked out of your ALEKS account until you purchase a regular Student Access Code. It is highly recommended that you purchase the Student Access Code BEFORE the two weeks expire to prevent interruptions with your ALEKS account.**
- **1. To log into ALEKS using the Financial Aid Access Code, go to: http://www.aleks.com.**
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- Four quizzes will be administered throughout the semester. The best three of the four quiz grades will be used to calculate your overall quiz grade. There will be no make-ups for missed quizzes.
- Any questions on grading must be given in writing within one week of receipt of answer scripts. However, making any marks directly on graded answer scripts will nullify your request.
- No makeup is given for missed midterm exams. If you miss one exam, your final exam score will be duplicated to replace the missed exam score.
- Note: Bring a scientific calculator to all classes and exams.

GENERAL

Chemistry 101.3 is a one semester, basic chemistry course roughly equivalent in caliber to the Regents Chemistry course taught in high schools within New York State. The course serves as a foundation for students who will go on to take Organic (Chem 102) and Biochemistry (Chem 103). A grade of C or higher is required to register for these courses. The course meets for 3 credit hours and includes both the recitation and lecture. The laboratory course, Chem 101.1 is a separate corequisite for Chem 101.3 and is administered and graded separately.

In chemistry 101.3, the student will develop an understanding of basic atomic structure, including the rationale for the formation of ions and molecules. Students will learn basic skills involved in making measurements, understand the scientific method, stoichiometry, solution chemistry, equilibrium, and acid-base chemistry. Students will master gas laws and develop and understanding of the energetics of chemical reactions.

LECTURE

Students are expected to attend all lectures. ***During the Fall 2022 semester, lectures will be conducted in-person. Any changes due to unpredictable events will be posted in the Announcements section on CUNY Blackboard. It is the student's responsibility to check emails and announcements pertinent to the class.*** Prior to each lecture, the students are expected to read the material in the textbook and be familiar with the concepts in the readings. The purpose of the lecture is to summarize the material, highlight important concepts, and provide illustrative examples of these concepts including solving typical problems. The attached lecture schedule is tentative and any variations which may arise will be addressed in class during lecture and via Blackboard postings.

Problem solving is a critical aspect of this course. By working to solve problems, students will come to better understand and master the various concepts. Homework assignments on the ALEKS online homework system are designed to provide instructional support of the course material but are also a significant (30%) component of the final grade. I encourage students to work in groups to solve problems; however, you must do the final entry to the homework system yourself.

RECITATION

Recitation is designed as a problem solving session and is incorporated into the lecture. Questions regarding lecture topics, homework problems, or worksheet exercises are welcomed at the beginning of lecture. Students are expected to participate in recitation by coming prepared to solve problems and/or ask questions regarding the solutions to problems indicating that they have arrived at a partial solution prior to recitation. There will be **4 quizzes** administered during lecture. The best 3 of the 4 quizzes will be used to determine your quiz average and will be used to provide 10% of your course grade.

All exams will be taken on the Queens College campus unless CUNY guidelines change during the semester. You must comply with the guidelines at the times of the exams to gain access to the campus. Specific instructions on how exams will be administered will be provided in lecture. ***Each student must have a scientific calculator and photo ID for each exam.***

CLASS POLICIES

Attendance: You are required to attend all exams, lectures, and recitations and to arrive promptly at the start time. NO MAKE-UP QUIZZES OR EXAMINATIONS will be provided. It is your responsibility to contact the lecturer (Dr. Burdett) BEFORE the meeting if you cannot be present for an exam or quiz. If using email, notification a MINUMUM of 3 hours prior to the meeting is required. WRITTEN documentation (i.e. Doctor's note) is then required at the next class meeting to avoid a grade or ZERO (0). **If you will be absent due to a religious observance, please notify Dr. Burdett in writing, at least 1 week before.**

Note also that all on-line homework assignments will have a deadline date.

Academic Dishonesty: Academic dishonesty is one of the most serious offenses within the academic community. Acts of academic dishonesty include, but are not limited to, plagiarism and/or cheating on exams and papers, including sharing and/or copying responses on assessments via electronic means, sabotage of research materials, the purchase or sale of academic papers, and falsification of records. Any student who engages in an activity that is academically dishonest is subject to disciplinary charges, as is any student who knowingly aids another who engages in them. 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/.

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FAQ

1. *How do I prepare for each Chem 101 lecture/recitation class?*

   - Bring a pencil or pen, a notebook, or a tablet to write on. Have the textbook and a scientific calculator with you during class.
   - Read the textbook chapter to be covered during lecture prior to class.
   - Complete the ALEKS Online homework objectives by the due date. For additional practice problems, try the posted worksheets or textbook problems for each chapter. Note the problems that you had trouble with and/or would like to focus on during recitation.

2. *How do I study for Chem 101?*
   - Learn how to use a scientific calculator. Practice basic mathematical skills involving decimals, fractions, exponents, and percentages.
   - Read the textbook before (or at least after) attending the lecture.
   - Make short summary notes or an outline for each chapter. Allocate time to reread old chapter summaries even as we progress to newer chapters. Constant repetition is necessary to remember Chemistry!
   - Practice assigned problems first and practice more from the book if possible. Look into the solution manual or get help only if you cannot solve on your own after several attempts.

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Tentative Lecture Schedule for Chemistry 101.3, Section 03, Spring 2023

REQUIRED MATERIAL: *General, Organic, & Biological Chemistry, 5th edition by Janice Smith.* You will also need online HW access. Go to https://www.aleks.com/sign_up and plug in the code TYDR4-PG64T **this is the code just for your section**. Then you can purchase an ALEKS 360 account (homework) with eBook access **(MUST BE 18 weeks access) from QC bookstore**. If you already have the book, buy only Aleks for GOB Online HW access. If you plan on taking 102 and 103, consider buying a 52-week access since it is most likely the same book used for all 3 classes (totally optional).

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Email: iva.burdett@qc.cuny.edu
Lecture: In-person
Exams: In-person

DAY	TUE/THU	TOPIC
Thu	26-Jan	Intro, Syllabus Ch1 Matter and Measurements (Part 1)
Thu	2-Feb	Ch1 Matter and Measurements (Part 2) Recitation Ch 1
Thu	9-Feb	Ch2 Atoms and the Periodic Table Ch2 Atoms and the Periodic Table
Thu	16-Feb	Recitation Ch 2 Ch3 Ionic Compounds
Thu	23-Feb	Recitation Ch 3, **Quiz #1 (Ch 1 & 2)** Ch 4 Molecular compounds
Thu	2-Mar	Recitation Ch 4 Ch 5 Classification & Balancing of Chem. Reactions
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Thu	30-Mar	Recitation Ch 6 Ch 7 Gases, Liquids and Solids
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Thu	20-Apr	Ch 7 Gases, Liquids and Solids, **Quiz #3 (Ch 5 & 6)** Recitation Ch 7
Thu	27-Apr	**Exam #2, (Ch 5-7) 50 min.** Ch 8 Solutions
Thu	4-May	Recitation Ch 8 Ch 9 Acids and Bases, **Quiz #4 (Ch 7 & 8)**
Thu	11-May	Recitation Ch 9 Final Exam Review
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Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1131- General Chemistry I Laboratory (Spring 2023)

Course Section and Code #: 9 (32868)

Instructor's Full Name: Mr. Henry Shum

Instructor's Email: hshum@qc.cuny.edu

Instructor's Office Hour: Th 6:30 - 7:30 pm Remsen 154 or by Appt.

Class Meeting Time and Location: : Th 7:30 - 10:20 pm Remsen 156

Textbook for the course: No charge to student and it is posted on course Blackboard.

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 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.]

Syllabus

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 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 final average calculation ONLY if your absence is excused by your lab instructor. Students who miss more than two lab experiments (excused or not) must drop the course.
Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

III. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on Blackboard in the Content Section. 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 blackboard. **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 Blackboard 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 Blackboard 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. **Objective:** It should clearly specify the aim for 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 word. 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 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.

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) COVID-19 Issues: If you have COVID-19, symptoms thereof, or otherwise ill, do not come in, stay home, seek medical advice. Inform your instructor if you are sick.

Inform your instructor, the lab coordinator and Parmanand Panday ,Office of Environmental Health and Safety (parmanand.panday@qc.cuny.edu),718-997-4171)ASAP if you have COVID-19.

(vii) 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/studentlife/services/specialserv/Pages/default.aspx

(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

(ix) 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/legalaffairs/policies-procedures/academic-integrity-policy/

Schedule of Experiments

Week 1 **(1/26)** 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

Week 2 (2/2) Exp. 1 Density

Week 3 (2/09) Exp. 2Hydrate

Week 4(2/16) Exp. 3 Precipitation

Week 5 (2/23) Exp. 4 Iron-Copper (II) Sulfate Redox

Week 6 (3/2) Exp. 5 Qualitative Study of Redox

Week 7 (3/9) Exp. 6 Copper Cycle

Week 8 (3/16) Exp. 7 Molar Mass of a Metal

Week 9 (3/23) Exp. 8 Dilution

Week 10 (3/30) Exp. 9 KHP Titration

Week 11 (4/20) Exp. 10 FAS Titration

Week 12(4/27) Exp. 11 Calorimetry I and II

Week 13 (5/04) Exp. 12 Heat of Neutralization

Week 14 (5/11) Check Out/Lab Final Review

Lab Final Quiz (Check Cunyfirst for the date)

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1131- General Chemistry I Laboratory (Spring 2023)

Course Section and Code #: 10 (32867)

Instructor's Full Name: Dr. Sheila Sanders

Instructor's Email: ssanders@qc.cuny.edu

Instructor's Office Hour: Tu 12:30 1:00 pm Remsen 206-D or by Appt.

Textbook for the course: No charge to student and it is posted on course Blackboard.

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 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.]

Syllabus

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 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 final average calculation ONLY if your absence is excused by your lab instructor. Students who miss more than two lab experiments (excused or not) must drop the course.
Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

III. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on Blackboard in the Content Section. 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 blackboard. **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 Blackboard 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 Blackboard 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. **Objective:** It should clearly specify the aim for 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 word. 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.

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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.

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(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.

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Inform your instructor, the lab coordinator and Parmanand Panday ,Office of Environmental Health and Safety (parmanand.panday@qc.cuny.edu),718-997-4171)ASAP if you have COVID-19.

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(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

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Schedule of Experiments

Week 1 **(1/27)** 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

Week 2 (2/3) Exp. 1 Density

Week 3 (2/10) Exp. 2Hydrate

Week 4(2/17) Exp. 3 Precipitation

Week 5 (2/24) Exp. 4 Iron-Copper (II) Sulfate Redox

Week 6 (3/3) Exp. 5 Qualitative Study of Redox

Week 7 (3/10) Exp. 6 Copper Cycle

Week 8 (3/17) Exp. 7 Molar Mass of a Metal

Week 9 (3/24) Exp. 8 Dilution

Week 10 (3/31) Exp. 9 KHP Titration

Week 11 (4/14) Exp. 10 FAS Titration

Week 12(4/21) Exp. 11 Calorimetry I and II

Week 13 (4/28) Exp. 12 Heat of

Neutralization

Week 14 (5/5) Review for Lab

Final and Check-out

Lab Final Quiz (Check cunyfirst

for the date)

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1131- General Chemistry I Laboratory (Spring 2023)

Course Section and Code #: 1 (32875)

Instructor's Full Name: Taner Ture

Instructor's Email: Tture@gradcenter.cuny.edu

Instructor's Office Hour: Tuesday,Friday 12:00-12:30 at Remsen 119 or by appt.

Textbook for the course: No charge to student and it is posted on course Blackboard.

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 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.]

Syllabus

I. Laboratory Course Format: In-person

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II. General Laboratory Rules

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

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B A completed typed LAB REPORT as per specified format is ALSO required for EACH experiment. **Lab reports must be uploaded to Blackboard 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. **Objective:** It should clearly specify the aim for 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."

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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.

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Inform your instructor, the lab coordinator and Parmanand Panday ,Office of Environmental Health and Safety (parmanand.panday@qc.cuny.edu),718-997-4171)ASAP if you have COVID-19.

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(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

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Schedule of Experiments

Week 1 **(**1/30**)** 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

Week 2 (02/06) Exp. 2 Hydrate

Week 3 (02/21) Exp. 1 Density

Week 4(02/27) Exp. 4 Iron-Copper (II) Sulfate Redox

Week 5 (03/06) Exp. 3 Precipitation

Week 6 (3/13) Exp. 6 Copper Cycle

Week 7 (3/20) Exp. 5 Qualitative Study of Redox

Week 8 (3/27) Exp. 8 Dilution

Week 9 (04/03) Exp. 7 Molar Mass of a Metal

Week 10 (04/17) Exp. 11 Calorimetry I and II

Week 11 (4/24) Exp. 12 Heat of Neutralization

Week 12(05/01) Exp. 9 KHP Titration

Week 13 (05/08) Exp.10 FAS Titration

Week 14 (05/15) Review forLab

Final and Check-out

Lab Final Quiz (Check cunyfirst

for the date)

General Chemistry I, CHEM 113.4, Spring 2023

I. Lecture Instructor Information

Instructor: Prof. Guoxiang (Emma) Hu

Email: guoxiang.hu@qc.cuny.edu

Office hours: Th 3:00 PM - 4:00 PM, REM/120G

II. Course Information

Lecture Times: TuTh 12:15 PM - 1:30 PM, Remsen 101

Recitation Times: 2A [33616] Yuan: Tu 1:40 PM - 2:30 PM, REM/105

2B [34546] Brea: W 2:40 PM - 3:30 PM, REM/105

2C [34712] Sanders: Th 1:40 PM - 2:30 PM, REM/105

Course description: Chem 113.4 is the first semester of a two-semester science majors/prehealth professions level introductory college chemistry course. The lecture meets for 3 credit hours weekly (two 75 min periods per week); each student will also have a 1 credit hour (one 50 min per week) recitation session. Math 114 (or equivalent) is a pre-requisite and the laboratory course (Chem 113.1) is a co-requisite. Chem 113.1 is administered and graded separately. A grade of C (not C-) is required to proceed to Chem 114.4. 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. 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 basic atomic structure. Understand formation of ions and molecules. Understand measurements and the scientific method. Balance chemical reactions and solve chemical stoichiometry problems. Understand periodic trends. Master the gas laws. Understand acid-base, oxidation-reduction, and precipitation reactions. Develop an understanding of the energetics of chemical reactions. Understand quantum numbers and write electron configurations. Draw Lewis structures and determine shapes of molecules using the VSEPR theory. Understand hybridization of atomic orbitals.

III. Books and Materials

Textbook: For this course you will be required to purchase McGraw-Hill ALEKS Access for Chemistry, 14th edition by Overby and Chang. You are not required to have a print text and please be aware if you purchase a used textbook you will still need to purchase ALEKS access. ALEKS Access Cards can be purchased at a discounted rate in the QC Online Bookstore.

26-week Access to ALEKS and Connect ($85.71) ISBN 9781266421860

52-week Access to ALEKS and Connect ($135.71) ISBN 9781266421273

(This is the best deal for students planning on completing chem 114.4 in a subsequent semester)

Other required items: You should make sure that Blackboard is operating appropriately on your tablet or computer.

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

Important Notes:

- This course requires a large quantity of work in ALEKS; be prepared to spend a minimum of 5 hours a week working in ALEKS.
- 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. 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 will be no extensions on the ALEKS assignments. The date is posted and set.
- No material (now or in the future) obtained from this course can be distributed, sold, or purchased.

IV. Grading and Evaluation

The grade is a 10-point grade scale as shown in Official Queens College Grade Scale; there will be no curve in this class. 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.

Grades	GPA	Numerical Value / Definition
A+	97-100	4.0 (GPA in Good Academic Standing)
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 (GPA in Academic Probation)
D+	67-69	1.3
D	60-66	1.0 (Grade of D is the lowest passing grade in the undergraduate division)
F	0-59	0.0

The final course grade will be calculated based on:

15% ALEKS Homework

- You should complete the homework for each chapter within one week after the chapter is covered in the lecture.
- 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.**

How to access Aleks:

Visit www.ALEKS.com and log in (if you've used ALEKS before) or Sign Up.

1. Enter your Class Code **LK3XL-MHYC4** in the box.

2. Verify that you are registering for the correct class.

3. Enter your access code (provided on access card shipped to you after purchasing).

4. If you haven't purchased or received your access code, enter the 20-character Financial Aid Access Code

5D696-536F0-D11A1-EFF46

Note: This code gives you temporary access to ALEKS for a two-week period. Once the code expires, you will be locked out of your ALEKS account until you purchase a regular Student Access Code. **It is highly recommended that you purchase the Student Access Code immediately, as it will take 7-10 business days to ship.**

5. Next you will see a page with the date your temporary access expires, click "Continue."

6. You will arrive at the **My Classes** page.

7. You can extend your access to your new class at any time by selecting **"Extend access"** from the class tile menu and enter your new access code. **You do not need to create a new ALEKS account to continue your class.**

How does Aleks work: At the start of the semester, you will be given an assessment that determines what you know and what you do not know. **During any assessment, do not hit the "I Dont Know" button unless you REALLY do not know how to work a problem.** Afterwards, your individual homework space will be populated based on the topics defined by the instructor and by what you have demonstrated that you already know.

60% Exams

- Exams will be based on topics covered in lecture and recitation.
- Exams will be given at the beginning of lecture. **There are no make-up exams.** If you know you will miss an exam, please contact me in advance.

25% ACS-style Final Exam

- The American Chemical Society examination is a 60 – 80 question multiple choice comprehensive examination.
  (5% will be added to the final exam grade for those who attend all of the sessions)

V. Tentative Class Schedule

This schedule is subject to change. You will be notified in writing of such changes. For the most up to date information and activities, always refer to Blackboard.

Date	Chapter #	Topic
01/26	--	Introduction to the course
01/31, 02/02	Chapter 1	Measurement and the Properties of Matter
02/07, 02/09	Chapter 2	Atoms, Ions, and Molecules
02/14, 02/16, 02/23	Chapter 3	Mass Relationships in Chemical Reactions
02/28	--	Exam 1
03/02, 03/07, 03/09	Chapter 4	Reactions in Aqueous Solutions
03/14, 03/16, 03/21	Chapter 5	Gases
03/23, 03/28	Chapter 6	Thermochemistry
03/30	--	Exam 2
04/04, 04/18	Chapter 7	Quantum Theory and the Electronic Structure of Atoms
04/20, 04/25	Chapter 8	Periodic Relationships Among the Elements
04/27, 05/02	Chapter 9	Compounds and Bonding
05/04	--	Exam 3
05/09, 05/11	Chapter 10	Structure and Bonding Theories
05/16	--	Review Session
TBA	--	Final exam

VI. College Policies and Student Services

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 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).

Netiquette: Please maintain a professional demeanor when posting online. You can be respectful even when you have a difference of opinion. Treat others as you'd want to be treated yourself. Don't type in all caps, as that is the online equivalent of shouting. If you need to emphasize a word or phrase, use italics.

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 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.

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (SPRING 2023)

Section Number: 9 (34705)

Instructor's Full Name: Babak Gandjian

Instructor's Email: bgandjianteach@gmail.com

Instructor's Office Hour: by appointment via Zoom or in-person, email to make appointment.

Textbook for the course: No charge to student and it is posted on course blackboard.

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

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Guoxiang (Emma) Hu (guoxiang.hu@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 Queens College campus in Remsen 153 at your scheduled time and day.

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 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.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

III. Laboratory Manual

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

IV. Prelab Preparation AND Lab Reports

A. 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 blackboard. **The Prelab write-up should include section IV C (1-4), listed below.** You should review the safety protocols for each experiment. Your lab manual will have a set of pre-lab questions to be completed in advance. **You must submit your completed prelab questions to your instructor before you start the experiment. This will be initialed and graded by the instructor.**

B. A completed LAB REPORT as per specified format is ALSO required for EACH experiment. **Lab reports are completed after the experiment is done. You should submit the lab report on 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 Needs To Be Completed in Prelab)**

*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. **Objective:** It should clearly specify the aim for 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 word. 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; i.e., the "carbon copy" of measurements or observations you directly recorded during the experiment. Staple datasheet to lab report.

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. **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.

8. **Conclusion:** 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.

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

(Part B) A written lab final will be administered on the last day (Check Out) of lab class. This part will be weighted 15% of final lab grade. Lab final will cover lab safety, and the contents that were covered during the entire semester.

*** Week 1 grading will be different that the rest. There will be Math quiz (20%), Safety Quiz (20%), Lab report for Exploring Boiling points (60%).

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 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 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 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.

VI. Other Important Information

(i) 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) 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) 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.

(vi) 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.”

(vii) 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/studentlife/services/specialserv/Pages/default.aspx

(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

(ix) 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/legalaffairs/policies-procedures/academic-integrity-policy/

Schedule of Experiments

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 (Online/Asynchronous); Prepare and Take Safety and Basic Math Quiz (Online/Asynchronous)]

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

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

2 Iron Content of a Tablet by Redox Titration IN PERSON; (Homework: Online Safety Quiz AND Basic Math Quiz Due This Week)

3 Beer's Law: IN PERSON

4 Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy: IN PERSON

5 The van't Hoff i Factor and Osmosis: IN PERSON

6 Kinetics: IN PERSON

7 Equilibrium - Part I: Le Châtelier's Principle: IN PERSON

8 Equilibrium - Part II: Measuring an Equilibrium Constant and Preparation and Analysis of a Complex Ion Compound – Part I: IN PERSON

9 Preparation and Analysis of a Complex Ion Compound - Finish: IN PERSON

10 Acids, Bases, Buffers and Salts: IN PERSON

11 Identifying an Acidic Salt by Titration: IN PERSON

12 Qualitative Analysis of Cations: Do It Yourself: IN PERSON

13 Electrochemistry: IN PERSON

14 Check Out – No Work May be Done: IN PERSON. FINAL LAB QUIZ

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (Spring 2023)

Section Number: 03 (34709)

Instructor's Full Name: Mr. Sangiorgi

Instructor's Email: **Thomas.Sangiorgi@qc.cuny.edu**

Instructor's Office Hour: Tuesdays, 10:20 – 11:20 PM, Remsen 153 (after lab class)

Textbook for the course: No charge to student and it is posted on course blackboard.

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

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Guoxiang (Emma) Hu (guoxiang.hu@qc.cuny.edu)

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

Syllabus

I. Laboratory Course Format- In-person

A. ALL In-person lab sessions will be held on 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 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. Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

III. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on Blackboard 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 blackboard. **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 complete the prelab questions posted on Blackboard 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 Blackboard 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. **Objective:** It should clearly specify the aim for 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.

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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 graphs or diagrams that may be required.

7. **Conclusion:** 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.

*** 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%).

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 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.

VI. Other Important Information

(i) 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) 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**

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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) COVID-19 Issues: If you have COVID-19, symptoms thereof, or otherwise ill, do not come in, stay home, seek medical advice. Inform your instructor, the lab coordinator and Parmanand Panday, Office of Environmental Health and Safety (parmanand.panday@qc.cuny.edu, 718-997-4171) ASAP if you have COVID-19.

(vi) 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/studentlife/services/specialserv/Pages/default.aspx

(vii) 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

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Schedule of Experiments, Spring 2023 (All Labs are IN PERSON)

Week #	Date	Experiment
1	Jan 31	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] Safety Video Links: https://www.youtube.com/watch?v=9o77QEeM-68 https://www.youtube.com/watch?v=gi3DeFY0cfw
2	Feb 07	Iron Content of a Tablet by Redox Titration; (Online Safety Quiz AND Basic Math Quiz Due This Week)
3	Feb 14	Beer's Law
	Feb 21	**No class – Monday Schedule**
4	Feb 28	Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy
5	Mar 07	The van't Hoff i Factor and Osmosis
6	Mar 14	Kinetics
7	Mar 21	Equilibrium - Part I: Le Châtelier's Principle
8	Mar 28	Equilibrium - Part II: Measuring an Equilibrium Constant and Preparation and Analysis of a Complex Ion Compound – Part I
9	Apr 04	Preparation and Analysis of a Complex Ion Compound - Finish
	Apr 11	**No Class - Spring Recess**
10	Apr 18	Acids, Bases, Buffers and Salts
11	Apr 25	Identifying an Acidic Salt by Titration
12	May 02	Qualitative Analysis of Cations: Do It Yourself
13	May 09	Electrochemistry
14	May 16	Review for Lab Final and Check Out
		Lab Final - TBD

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (Spring 2023)

Section Number: 03 (34709)

Instructor's Full Name: Mr. Sangiorgi

Instructor's Email: **Thomas.Sangiorgi@qc.cuny.edu**

Instructor's Office Hour: Tuesdays, 10:20 – 11:20 PM, Remsen 153 (after lab class)

Textbook for the course: No charge to student and it is posted on course blackboard.

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

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Guoxiang (Emma) Hu (guoxiang.hu@qc.cuny.edu)

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

Syllabus

I. Laboratory Course Format- In-person

A. ALL In-person lab sessions will be held on 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 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. Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

III. Laboratory Manual

A custom laboratory manual is used and is available free of charge, posted on Blackboard 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 blackboard. **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 complete the prelab questions posted on Blackboard 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 Blackboard 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. **Objective:** It should clearly specify the aim for 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 instructor; i.e., the "carbon copy" of measurements or observations you directly recorded during the experiment.

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7. **Conclusion:** 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.

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B. ALL lab reports are due by 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.

VI. Other Important Information

(i) 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) 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.

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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) COVID-19 Issues: If you have COVID-19, symptoms thereof, or otherwise ill, do not come in, stay home, seek medical advice. Inform your instructor, the lab coordinator and Parmanand Panday, Office of Environmental Health and Safety (parmanand.panday@qc.cuny.edu, 718-997-4171) ASAP if you have COVID-19.

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(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/legalaffairs/policies-procedures/academic-integrity-policy/

Schedule of Experiments, Spring 2023 (All Labs are IN PERSON)

Week #	Date	Experiment
1	Jan 31	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] Safety Video Links: https://www.youtube.com/watch?v=9o77QEeM-68 https://www.youtube.com/watch?v=gi3DeFY0cfw
2	Feb 07	Iron Content of a Tablet by Redox Titration; (Online Safety Quiz AND Basic Math Quiz Due This Week)
3	Feb 14	Beer's Law
	Feb 21	**No class – Monday Schedule**
4	Feb 28	Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy
5	Mar 07	The van't Hoff i Factor and Osmosis
6	Mar 14	Kinetics
7	Mar 21	Equilibrium - Part I: Le Châtelier's Principle
8	Mar 28	Equilibrium - Part II: Measuring an Equilibrium Constant and Preparation and Analysis of a Complex Ion Compound – Part I
9	Apr 04	Preparation and Analysis of a Complex Ion Compound - Finish
	Apr 11	**No Class - Spring Recess**
10	Apr 18	Acids, Bases, Buffers and Salts
11	Apr 25	Identifying an Acidic Salt by Titration
12	May 02	Qualitative Analysis of Cations: Do It Yourself
13	May 09	Electrochemistry
14	May 16	Review for Lab Final and Check Out
		Lab Final - TBD

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (Spring 2023)

Section Number: 06 (33613)

Instructor's Full Name: Mr. Sangiorgi

Instructor's Email: **Thomas.Sangiorgi@qc.cuny.edu**

Instructor's Office Hour: Thursdays, 4:30 – 5:30 PM, Remsen 153 (after lab class)

Textbook for the course: No charge to student and it is posted on course blackboard.

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

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Guoxiang (Emma) Hu (guoxiang.hu@qc.cuny.edu)

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

Syllabus

I. Laboratory Course Format- In-person

A. ALL In-person lab sessions will be held on 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 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. Written documentation will be required for excused absences.

II. General Laboratory Rules

A. Always wear safety goggles.

B. NO short pants, skirts, 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.

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A custom laboratory manual is used and is available free of charge, posted on Blackboard 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.

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Schedule of Experiments, Spring 2023 (All Labs are IN PERSON)

Week #	Date	Experiment
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2	Feb 02	Iron Content of a Tablet by Redox Titration; (Online Safety Quiz AND Basic Math Quiz Due This Week)
3	Feb 09	Beer's Law
4	Feb 16	Analyzing a Complex Mixture with Paper Chromatography and Visible Light Spectroscopy
5	Feb 23	The van't Hoff i Factor and Osmosis
6	Mar 02	Kinetics
7	Mar 09	Equilibrium - Part I: Le Châtelier's Principle
8	Mar 16	Equilibrium - Part II: Measuring an Equilibrium Constant and Preparation and Analysis of a Complex Ion Compound – Part I
9	Mar 23	Preparation and Analysis of a Complex Ion Compound - Finish
10	Mar 30	Acids, Bases, Buffers and Salts
	Apr 6	**No Class - Spring Recess**
	Apr 13	**No Class - Spring Recess**
11	Apr 20	Identifying an Acidic Salt by Titration
12	Apr 27	Qualitative Analysis of Cations: Do It Yourself
13	May 04	Electrochemistry
14	May 11	Review for Lab Final and Check Out
		Lab Final - TBD

Chemistry and Biochemistry Department, Queens College - CUNY

CHEM 1141- General Chemistry II Laboratory (Spring 2023)

Section Number: _4_

Instructor's Full Name: _Aaron Malinoski_

Instructor's Email: _aaron.malinoski@qc.cuny.edu_

Instructor's Office Hour: _by appointment (email for appointment)_

Textbook for the course: No charge to student and it is posted on course blackboard.

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

Pre-Requisite/Co-Requisite: CHEM 1144

Coordinator: Prof. Guoxiang (Emma) Hu (guoxiang.hu@qc.cuny.edu)

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Schedule of Experiments

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3 Beer's Law: IN PERSON

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6 Kinetics: IN PERSON

7 Equilibrium - Part I: Le Châtelier's Principle: IN PERSON

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Preparation and Analysis of a Complex Ion Compound – Part I: IN PERSON

9 Preparation and Analysis of a Complex Ion Compound - Finish: IN PERSON

10 Acids, Bases, Buffers and Salts: IN PERSON

11 Identifying an Acidic Salt by Titration: IN PERSON

12 Qualitative Analysis of Cations: Do It Yourself: IN PERSON

13 Electrochemistry: IN PERSON

14 Review for Lab Final and Check Out: IN PERSON.

Department of Chemistry and Biochemistry

Chemistry 1144 • Spring 2023 • Lecture Schedule (Evening)

Text: *"Chemistry" by Overby & Chang, 14th ed, McGraw-Hill, 2022*

Dates	Chapter No.	Topics
Jan 26	11	Liquids; Solids; Intermolecular Forces
Feb 2, 9	12	Solutions
Feb 9, 16	13	Kinetics
Feb 23, Mar 2	14	Equilibrium
Mar 2		**EXAMINATION # 1**, covering Chapters 11-13
Mar 9	15	Acids and Bases
Mar 16	15/16	Acid-Base Equilibria
Mar 23	16	Solubility and Complex Ion Equilibria
Mar 30		**EXAMINATION # 2**, covering Chapters 14-16 (no solubility)
Mar 30, Apr 20	17	Thermodynamics
Apr 20, 27	18	Electrochemistry
May 4, 11	23	Transition Metals and Metal Complexes
May 11		**EXAMINATION # 3**, covering Chapters 16-18

Point distribution: Hour Exams: 45%; Recitation work: 25%, including 10% for the homework (Aleks) and 15% for quizzes; Final (cumulative): 30%.

Deadlines for the homework:
35% of pie chart must be complete by 11:59 pm on Mar 5
60% of pie chart must be complete by 11:59 pm on Apr 9
85% of pie chart must be complete by 11:59 pm on May 7
100% of pie chart must be complete by 11:59 pm on May 14

Homework website: www.aleks.com **Class Key: UUHJC-KX4Q4**

Financial Aid Access Code for Aleks: C42DC-C27ED-92F94-324F0

Lecturer: Michael V. Mirkin; Remsen Hall # 120E, phone: (718) 997-4111, mmirkin@qc.cuny.edu

Office hours: Thursday 5:25 PM – 6:25 PM and by appointment.

A grade of C or better is required to register for the next Chemistry course.

Pathways Student Learning Outcomes

CHEM 1144 fulfils the following Pathways requirement: LPS

The learning outcomes for this category may be downloaded here:

https://cuny-my.sharepoint.com/:w:/g/personal/sadia_ishak63_gmail_cuny_edu/EYqaHCBiQuVFkBm9becXWIlBeHon9wHnrXhV6HzRj90hRw?e=eLelOW

This course also fulfils the following Pathways Requirement: COSCI

The learning outcomes for this category can be downloaded here:

https://cuny-my.sharepoint.com/:w:/g/personal/sadia_ishak63_gmail_cuny_edu/EXqqrmyv2QdOhI_VjTWkDFwBj6asNHZ8bPuyUBKPG9WfuQ?e=NQxgDH

QUEENS COLLEGE

Department of Chemistry & Biochemistry

Chem 114.4 Spring 2023

1. Lecture Instructor Information

Lecturer: Dr. Sheila Sanders

Office: Remsen 206-D (Chemistry & Biochemistry Department)

Office Hours: T 12:30 – 1:00 pm or appointment by email

Contact: ssanders@qc.cuny.edu

(every effort will be made to respond by email within 24 hrs)

2. Course Information & Description

In-Person

Lecture Times: M & Th, 9:15 – 10:30 am, Remsen 101

Recitation Times: Remsen 017

M, 11:00 – 11:50 am.	(Sec. 1B, 33632) Malinoski
M, 1:40 – 2:30 pm.	(Sec. 1A, 34873) Chung
Th, 12:40 – 1:30 pm.	(Sec. 1C, 33611) Ariel

Items Required: Internet Access, Google Chrome, CUNYfirst account, CUNY Blackboard, Office 365, scientific non-graphing calculator, ALEKS access card for on-line assignments

Textbook: Chemistry, 14th edition by Overby and Chang. The eBook is available with purchase of the on-line assignments.

GENERAL Chemistry 114.4 is the second semester of a two-semester science majors/pre-health professions level introductory college chemistry course. The lecture meets for 4 credit hours weekly (actually two 75-minute periods per week) and the recitation meets for one 50-minute period weekly. 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. This course requires a large quantity of work in ALEKS.

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

3. Grading Policy & Types of Assignments

Official Queens College Grade Scale:
https://www.qc.cuny.edu/Academics/SupportPrograms/advising/Academic-and-Grading-Policies/Pages/Default.aspx

15% ALEKS Homework: Aleks homework should be completed one week after we cover the full chapter in lecture; however, the official due date is May 15 th. 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.**

60% Exams: Mid-term exams will be based on topics covered in lecture and recitation. The format may be a combination of the following: *Multiple Choice, Fill in the blank, Definitions, Short Response and Long Answer Calculations*. Exams are given **in-person** at the beginning of lecture.
There are no make-up exams.

25% ACS-style Final: The American Chemical Society-style examination is a 50 – 60 question multiple choice comprehensive examination. It will be given **in-person** at the end of the semester.
Check cunyfirst for the final exam date and time.

Recitation: A maximum of 5% will be added to the final exam grade for attendance and participation in recitation.

4. *Tentative Lecture Schedule

Date		Topic		
Th,1/26		Introduction		
M,1/30		Chapter 11 Intermolecular Forces		
Th,2/2		Chapter 11 Intermolecular Forces		
M,2/6 Th,2/9		Chapter 12 Solutions Chapter 12 Solutions		
M,2/13 Th,2/16		No Class Chapter 13 Kinetics		
*T,2/21 Tues. schedule Th,2/23		Chapter 13 Kinetics Chapter 13 Kinetics		
M,2/27 Th,3/2		**Exam # 1** Chapter 14 Equilibrium		
M,3/6 Th,3/9		Chapter 14 Equilibrium Chapter 14 Equilibrium		
M,3/13 Th,3/16		Chapter 15 Acids and Bases Chapter 15 Acids and Bases		

M,3/20 Th,3/23		Chapter 15 Acids and Bases Chapter 16 Acid-Base Equilibria and Solubility Equilibria		

M,3/27 Th,3/30		Chapter 16 Acid-Base Equilibria and Solubility Equilibria Chapter 16 Acid-Base Equilibria and Solubility Equilibria		
M,4/3 Th,4/6		**Exam # 2** No Class		
M,4/10 Th,4/13		No Class No Class		
M,4/17		Chapter 17 Entropy, Gibbs Energy, and Equilibrium		
Th,4/20 M,4/24		Chapter 17 Entropy, Gibbs Energy, and Equilibrium Chapter 17 Entropy, Gibbs Energy, and Equilibrium		

Th,4/27 M, 5/1		Chapter 18 Electrochemistry Chapter 18 Electrochemistry		
Th,5/4 M,5/8		Chapter 18 Electrochemistry **Exam # 3**		
Th,5/11 M,5/15		No Class – Reading Day Review		
Th,5/18		Final Exam (8:30 – 10:30 am, Rem 101)		

The schedule is tentative; the instructor will notify students in writing of any changes.

The final exam will be a comprehensive 2-hour American Chemical Society-Style exam.

Any changes to the exam dates will be announced in class at least 1 week in advance. There will be no make-up exams.

5. How to access ALEKS

For this course you will be required to purchase McGraw-Hill Education **ALEKS Access** for Chemistry, 14th edition by Overby and Chang. You are not required to have a print text and please be aware if you purchase a used textbook you will still need to purchase access to ALEKS (which includes access to the eBook).

ALEKS Access Cards should be purchased at a discounted rate in the QC Online Bookstore. https://qc.textbookx.com/institutional/index.php

26-Week Access to ALEKS and Connect ($85.71) ISBN: 9781266421860 ISBN10: 1266421866

52-Week Access to ALEKS and Connect ($135.71) ISBN: 9781266421273 ISBN10: 1266421270

How to access Aleks HW:

Next, visit www.ALEKS.com and log in (if you've used ALEKS before) or click the 'New Student? Sign Up Now' Button in yellow. Then enter course code: **WAYQD – J3NPP** 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 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, **CE16C-F82AD-E96E1-95B60**, 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.

6. Important Notes

- This course requires a large quantity of work in ALEKS.
- 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. 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 will be **no** extensions on ALEKS assignments. The date is posted and set.
- There will be **no** make-ups. If you know you will miss an exam, please contact me **in advance**.
- 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.
- Problems within and at the end of each chapter should be completed for additional practice.
- There will be **no** curve in this class.
- No material (now or in the future) obtained from this course can be distributed, sold, or purchased.

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/policiesprocedures/academicintegrity-policy/.