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Office Hours: M, W 1 – 2 pm *or by appointment*
Office hours held via Zoom at this link:

<https://brooklyncollege.zoom.us/j/99817146000?pwd=RDdNK1M4RklSYVFIZUo1Z1RyWVhaUT09>

Required Text: *Introduction to General, Organic, and Biochemistry*, Bettelheim, Brown, Campbell, and Farrell, Cengage Learning 2016, 11th Edition. ISBN-13: 978-1-285-86975-9

Laboratory Manual : *General Chemistry For The Health Professions*, Kobrak, Mark N. ISBN: 9781524900021, ISBN10: 1524900028

Required Items: Scientific calculator.

Class Schedule:

Synchronous Sessions M 11:00 AM – 12:30 PM, W 11:00 – 11:50 AM will be held via Zoom at this link:

<https://brooklyncollege.zoom.us/j/93561023572?pwd=U2ZKbTRSTDhXNUNremEyMzVubk9SZz09>

- Attendance is not required, except when quizzes or midterms are given. The schedule for midterms and quizzes is given below.
- Exams and quizzes will be given in Blackboard.
- Synchronous sessions will be used for question and answer sessions rather than formal presentation of new material.

Examination Schedule:

FIRST TEST: Monday, October 14th, 11:00 AM – 12:30 PM

SECOND TEST: Monday, November 16th, 11:00 AM – 12:30 PM

NO MAKEUP EXAMS ARE GIVEN FOR LECTURE TESTS.

FINAL EXAM: WEDNESDAY, DECEMBER 16th, 10:30 AM – 12:30 PM

FINAL EXAM IS COMPREHENSIVE

QUIZZES: 09/16, 09/30, 10/28, and 12/02 – **Quizzes will run from 11:00 – 11:30 AM on those days.**

Required Technology:

- Students are assumed to have internet access and a device capable of viewing video and common image and document formats.
- Multistep calculations are an important part of this course, and the answers to some quiz and midterm problems will require the uploading of solutions in a digital format. Students must have the means to do this by uploading pictures or scans of documents prepared on paper. Assessments will be written allowing ample time for such uploads, but students must be prepared to upload images during quizzes and examinations.

Use of Blackboard:

The Blackboard Course Management System will be the central platform for the course. Materials will be posted there, messages will be distributed as Announcements and through its e-mail system, and all assessments will be administered through it. It is therefore critical that you have access to the system with a compatible browser and can both download and upload files. You should also confirm that your e-mail address in the Blackboard system is one that you read regularly.

Technical Support:

In general, requests for technical support should be directed to Brooklyn College Information Technology Services (ITS) Help Desk: Phone: 718.951.4357 E-mail: helpdesk@brooklyn.cuny.edu

Academic dishonesty is prohibited in the City University of New York:

Academic dishonesty is prohibited in the City University of New York. Cheating, plagiarism, internet plagiarism and obtaining unfair advantages are violations of policies of academic integrity and are punishable by penalties, failing grades, suspension and expulsion.

For more information about CUNY policy on academic integrity see:

http://www.brooklyn.cuny.edu/web/abo_initiatives/110901_AcademicIntegrity.pdf

Students caught engaging in academic dishonesty will receive a grade of “F” for the course.

Learning Objectives: Chem1040 provides students with an introduction to chemistry. Students will consider how scientific knowledge is acquired, applied, and communicated, as they explore many of the key concepts central to the science of chemistry. By working through example cases and practice problems, students will further develop their chemical content knowledge, critical thinking abilities, and problem solving skills. By the end of the course, successful students will be able to demonstrate a basic understanding of the structure and properties of chemical systems using the tools of the discipline including: models, data analysis, and the use of symbolic representations. Through participation in course activities students will gain experience in the practices of scientific investigators including: observation, logic, analysis, objectivity, precision, and clear communication.

LECTURE SCHEDULE

Lecture #	Topics	Assigned Reading
08/31	Math Review, Dimensional Analysis, States of Matter	Appendix I, Appendix II, Chapter 1
09/14	Elements, Compounds, Atoms, Electron Configuration, Periodic Property	Chapter 2
09/16	Quiz 1	
09/21	Ions, Chemical Bonds, Lewis Structures, Bond Angles, Polarity, Resonance	Chapter 3.1-3.11
09/29	Chemical Equations, Oxidation and Reduction, Mole, Mass Relationships	Chapter 4.1-4.6
09/30	Quiz 2	
10/05	Mass Relationships, Heat of Reaction	Chapter 4.7-4.8
10/14	Exam I	Chapters 1-4.6
10/19	Gases, Liquids, and Solids	Chapter 5
10/26	Solutions and Colloids, Concentration	Chapter 6
10/28	Quiz 3	
11/02	Reaction Rates and Chemical	Chapter 7

	Equilibrium	
11/09	Acids and Bases, Conjugate Acid-Base Pairs, pH, pOH	Chapter 8.1- 8.8
11/16	Exam II	Chapters 4.7-8.8
11/23	Titration	Chapters 8.9 plus lecture notes
11/30	Buffers, pH of a Buffer	Chapter 8.10-8.12 plus lecture notes
12/02	Quiz 4	
12/07	Nuclear Chemistry	Chapter 9
12/16	FINAL EXAM	All discussed chapters

Quizzes and Examinations:

Quizzes and examinations will be administered subject to the following rules:

- Examinations will be open-book and open-note. Students may use the textbooks and any notes they have created themselves during the examination. Students may not use online resources (other than the HTML version of the text, if they desire) or consult other people for advice, either in-person or electronically. Doing so represents academic dishonesty and will result in a failing grade for the course if discovered.
- Students are encouraged to plan to take the examination using a Firefox or Chrome browser, and to use wired (rather than wireless) internet connections if at all possible.
- Examinations will be administered through the Blackboard system, with the following parameters:
 - Examinations will be timed. Students must begin the exam at or after the appointed start time and will lose access to the exam at its endpoint.
 - Questions will be visible to students one at a time. Students will be able to see only one question, and will not be able to see the next question until the current one is submitted. Once submitted, examination questions cannot be reviewed or changed (i.e. no “backtracking” to questions that have already been answered).
 - Examination questions will be randomized. All students will receive the same set of questions, but these will be presented in a random order to each student.
 - Students will be able to see their scores and review their answers a few days after completion of the exam.

If students encounter technical problems during the examination, they must e-mail the instructor immediately and stop taking assessment. Students who e-mail the instructor during the examination, or shortly thereafter, to report a technical problem will be provided some form of accommodation. Students who choose to complete the examination may not ask for accommodation, even if they believe technical issues undermined their performance.

GRADING:

Your final grade will be determined as follows:

30% Two lecture exams

20% Three (highest grades out of four) recitation quizzes

20% Laboratory reports

30% Final Exam

The homework problems are assigned to improve learning and skills. Although they are assigned homework, they are not collected nor graded. Nevertheless, it remains student’s responsibility to do them and to master them. Mastering means that each student should be able to start each problem, work through each problem, and

get the right answer to each problem in a reasonable period of time without looking anything up. Needless to say, this will not happen when doing many problems for the first time. This is normal. Problems that cannot be readily completed should be flagged, and the student should redo those problems at a later time. This process should be repeated until the problem is mastered. Although not collected nor graded, material from the assigned problems or from any other assigned homework will be included on the exams. FAILURE TO MASTER HOMEWORK PROBLEMS IS MAJOR CONTRIBUTOR TO LOW EXAM SCORES.

Homework Assignment	Problems
Chapter 1	17-30, 32, 36-40, 45-52, 56-60, 62, 66-68
Chapter 2	9, 10, 15-22, 24, 26, 28, 29, 33, 35, 41, 47, 49, 51-54, 58, 59, 61-66, 68, 76
Chapter 3	17-21, 23, 25, 29-36, 38, 42-44, 51, 55-57, 59-63, 65-67, 73, 76-78, 80-83, 86-91
Chapter 4	17-20, 28-31, 35-39, 41-51, 54-58, 61-63, 66-68, 70-73, 75
Chapter 5	12-19, 21-24, 28, 32, 33, 37, 39, 40, 41, 46, 47, 49, 50, 55, 56, 61-62, 64, 65, 68, 70, 71, 74, 76, 78, 79, 83, 86
Chapter 6	15-18, 20, 21, 24-29, 31, 34-43, 46-48, 56, 57, 59, 60, 69-71, 73, 77
Chapter 7	11, 12, 13, 15, 17, 19-21, 24-28, 31, 33, 34, 36-41
Chapter 8	13-18, 20-25, 26-27, 30, 33, 35-41, 43-47, 49-52, 54-61, 62-68
Chapter 9	8, 10, 11, 13, 15, 17, 19, 20, 22, 24-26, 28, 31, 34, 36, 39, 52, 53

LABORATORY EXPERIMENTS

Lab Exemptions: Students who are repeating the course may be able to obtain laboratory exemptions. You may file a request for a laboratory exemption form in the Chemistry Department website. Students who receive exemptions must take the recitation quizzes.

Meeting	Laboratory Assignment
1	Check in, Safety, Lab Techniques
2	Experiment 1 – Density and measurement
3	Experiment 2 – Introduction to Gravimetric Analysis
4	Experiment 3 – Synthesis of Zinc Iodide
5	Experiment 4 – Basics of Chemical Reactions
6	Experiment 5 – Conductivity and Electrochemistry
7	Experiment 6 – The Ideal Gas Law
8	Experiment 7 – Intermolecular Forces and Physical Properties
9	Experiment 8 – Determination of Molecular Weights by the Method of Freezing-Point Depression
10	Experiment 9 – Titration of Strong Acids and Bases
11	Experiment 10 – The Rate of Reaction
12	Experiment 11 – Determination of Vitamin C concentration by Iodometry
13	Experiment 12 – Acid-Base Equilibria and the Preparation of Buffer Solutions
14	Checkout

Laboratory reports are to be submitted directly to the Laboratory Instructors. The reports are due *before* the Monday after the week in which the laboratory experiment was assigned. (An exception is for the Rates lab.) Any lab handed back late will have one point (out of a total of ten) deducted from the report. This deduction will continue each day, so that an assignment that is 3 days late will not be able to receive any grade above a 7. Any assignment that is more than 5 days late will not be graded and, assuming a reasonable amount of work was done, will simply receive a 4.