

City University of New York (CUNY)

CUNY Academic Works

Open Educational Resources

City College of New York

2022

Preparation for General Chemistry

Jose Cobo
CUNY City College

[How does access to this work benefit you? Let us know!](#)

More information about this work at: https://academicworks.cuny.edu/cc_oers/394

Discover additional works at: <https://academicworks.cuny.edu>

This work is made publicly available by the City University of New York (CUNY).
Contact: AcademicWorks@cuny.edu

Preparation for General Chemistry

Course Director: Jose Cobo

Office: H-210
email: jcobo@med.cuny.edu

Web Site: <https://www.coursera.org/learn/chemistry-1>

Text book: <https://openstax.org/details/books/chemistry>

Lecture: Monday (5:00 – 6:00 PM)

Course Description:

This course introduces students to the fundamental concepts in chemistry. The flipped classroom method is used to engage students in problem solving and hypothesis development. The problems discussed during the Flipped Classroom demonstrate students how this knowledge gained has practical importance.

Course Objectives:

- This course provides a basic introduction to general chemistry.
- This course will introduce the concepts of atomic structure, periodic trends, compounds, reactions and stoichiometry, bonding, and thermochemistry. This course is a precursor to the Principles of General Chemistry

Methods of Instruction:

Students will be asked to enroll in (<https://www.coursera.org/learn/chemistry-1>) a free online chemistry course) . The one hour in-class portion of the course will be conducted as Flipped Classroom, in which student will apply their knowledge from the on-line course to solve problems. Zoom polling technology will be used during these sessions.

Methods of Assessment:

Quizzes: There will be a total of 8 quizzes throughout the course. These quizzes are part of the online Coursera course (<https://www.coursera.org/learn/chemistry-1>). These quizzes are required to be completed in order to earn any points towards the Posttest.

There will be 15 Posttest, one after each session. The Posttest will be completed collaboratively by the students with their assigned small group.

Exams: There will be one cumulative exam.

Monitoring progress: After each session, students who have unsatisfactory performance will be notified by the course instructor to discuss what steps are required to improve performance.

Assessment	Overall Weight (%)
Participation	15
Posttests*	30
Final Exam	55
Total	100

*Completion of the online Coursera quizzes are required to earn any point towards the Posttest.

Grading Scale:

95-100	A+
90-94	A
87-89	A-
84-86	B+
80-83	B
77-79	B-
70-76	C
< 70	F

Make-up policy: There will be no scheduled make-up exam, quizzes or posttests.

Integrity: The highest ethical behavior is expected. In the unlikely event of use of an unauthorized material in an exam, quiz, etc. the student will receive a zero for that particular piece of work and conduct will be reported to the SAPC.

Reassessment Policy: There will be no reassessment under any circumstances.

Class Schedule:

Topic 1

Describe the components inside the atom and look especially at the electrons.
Discuss how the electron structure determines the properties of the elements.

Topic 2

Discuss how the periodic table can be used to compare the elements according to atomic size and various energies.
Predict chemical properties of the elements using the periodic table.

Topic 3

Discuss how atoms combine to form either molecular or ionic compounds.
Apply the rules of nomenclature that ensure that a compound is named according to IUPAC rules
Describe the quantitative relationships for compounds including the molar mass of and mass percent of an element in a compound

Topic 4

Discuss how compounds react with one another to form new substances

Write balanced chemical equations to represent what is happening in a reaction

Identify and distinguish different types of reactions including precipitation, acid-base, oxidation-reduction, and combustion reaction.

Topic 5

Write a balanced chemical equation to determine the relative amounts of substances needed to react or the amount of products formed.

Calculate theoretical yield and limiting reactant and calculate the percent yield for a reaction

Topic 6

Assess covalent bonding in molecular compounds as related to molecular geometry and chemical and physical properties

Write Lewis Structures for covalent compound

Predict the three-dimensional geometry of an individual molecule by using the Lewis structure

Topic 7

Define energy and describe the nature of energy changes in chemical and physical changes

Define the related properties of heat, thermal energy, temperature, heat capacity and specific heat

Distinguish among various transfer methods: conduction, convection, and radiation

Calculate and interpret heat transfer and related properties using typical calorimetry data.

Week 15

Cumulative exam

Attendance Policy

Attendance is mandatory

Student course evaluations:

The Executive Faculty Committee of The Sophie Davis School of Biomedical Education has mandated all students to complete course evaluations for all courses in which they are enrolled.

School documents online:

On a related matter, the Office of Academic Affairs has a Blackboard site at: <http://cuny.edu> where school reference documents are posted, including Student Handbook, Ethics Handbook, new curriculum by class entry year, course policies, course schedules, and final exam schedules. The Bb site offers e-mail access to students, faculty and staff. E-mail lists by class will be available shortly.