



蘇州大學
Soochow University

CHM 109 General Chemistry I

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

In General Chemistry I, you will memorize language and facts and learn concepts and calculations used by scientists to describe matter and the things that different types of matter do. Topics include stoichiometry, states of matter, atomic structure, electron structure of atoms, the periodic table, periodic properties, bonding, gases.

Upon Completion of this Course, students will be able to:

1. Know the fundamentals of the properties of matter, measurement, and uncertainty;
2. Have an introductory appreciation for the theories of atomic structure and chemical bonding;
3. Know the symbolism and terminology of chemistry as well as the organization and information conveyed by the periodic table of elements;
4. Understand the various forms of energy and the role they play in physical and chemical processes.

PREREQUISITES

None

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
Assignments	10 Points



Quizzes	20 Points
5 Labs and Reports	30 Points
Midterm	15 Points
Final Exam	25 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Raymond Chang, *General Chemistry: The Essential Concepts*, 5th Edition, The McGraw-Hill Companies, Inc. Press, 2008.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	Topics: Topic 1: Classifications of Matter Topic 2: Physical and Chemical Properties of Matter Topic 3: The Atomic Theory Topic 4: Atomic Number, Mass Number, and Isotopes Assessments: Lab #1 and Report Assignment #1
Module 2	Topics: Topic 5: The Periodic Table Topic 6: Molecules and Ions Topic 7: Introduction to Organic Compounds Topic 8: Stoichiometry Assessments: Lab #2 and Report Quiz 1



Module 3	Topics: Topic 9: Chemical Reactions and Chemical Equations Topic 10: General Properties of Aqueous Solutions Topic 11: Acid-Base Reaction Topic 12: Oxidation-Reduction Reactions Assessments: Lab #3 and Report Midterm#1
Module 4	Topics: Topic 13: The Gas Laws Topic 14: The Kinetic Molecular Theory of Gases Topic 15: The Nature of Energy and Types of Energy Topic 16: Introduction to Thermodynamics Assessments: Lab #4 and Report Quiz 2
Module 5	Topics: Topic 17: The Electronic Structure of Atoms Topic 18: The Periodic Table Topic 19: Electron Affinity Topic 20: Lewis Dot Symbols Assessments: Lab #5 and Report Assignment #2
Module 6	Topics: Topic 21: Molecular Geometry Topic 22: Valence Bond Theory Topic 23: Hybridization of Atomic Orbitals Topic 24: Molecular Orbital Theory Assessments: Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning



and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.



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DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.