

CHM 1142/L GENERAL CHEMISTRY I

Troy University - Hanoi University of Science and Technology
Summer2025

Course code: CHM 1142/L

Course title: General Chemistry I

Credit value: [3 theory; 1 practice]

Required or elective: College Core Requirement for Troy University Computer Science Program

Brief course description: Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure.

Textbook(s) and other required materials:

- **Textbook:** Chemistry: The Central Science, Global Edition, by T.E. Brown, H. E. LeMay, B. E. Bursten, C. Murphy, P. Woodward, M. E. Stoltzfus, Pearson, 15th Edition, 2021.
- **Periodic table:** A periodic table is required for assignments, quizzes, exams, and in-class activities.
- **Calculator:** A calculator is required for assignments, quizzes, exams, and in-class practice.
- Lecture materials, handouts, problem sets, and homework assignments (available on the course website: MS Teams)
- Access to a personal smart device capable of accessing the internet to answer questions during lectures and meetings.

Course objectives:

1. Understand the atomic, molecular, and ionic structure of matter and how it influences the physical and chemical properties of substances.
2. Develop skills in measurement and stoichiometric calculations to quantify substances and predict chemical reaction behaviors.
3. Learn the organization of elements in the periodic table and explore how their physical and chemical properties correlate.
4. Analyze the physical nature of mixtures (solutions) and apply basic concentration expressions.
5. Examine the nature of energy and its relationship in physical changes and chemical reactions.
6. Investigate chemical reactions in solution and their characteristics.
7. Explore the nature of chemical bonds and their influence on molecular geometry.

Learning outcomes: After mastering this course, students will be able to:

1. Demonstrate an understanding of atomic, molecular, and ionic structures and their influence on the properties of substances.
2. Apply stoichiometric principles to solve quantitative problems in chemical reactions.
3. Identify trends in the periodic table and relate them to the physical and chemical properties of elements.
4. Calculate concentrations and analyze the behavior of solutions.
5. Explain energy changes in physical and chemical processes.
6. Predict the behavior of chemical reactions in solution.
7. Identify different types of chemical bonds and relate them to molecular geometry.
8. Get hands-on experience in the lab, write quality science reports, and communicate effectively in a team.

Class A @ C7-115: Tuesday 14:00 PM – 16:45PM & Thursday 8:30 AM - 11:15 AM
Class B @ C7-113: Wednesday 8:30 AM - 11:15 AM & Thursday 14:00 PM – 16:45PM
Course Instructor: Dr. Vu Thi Ngoc Minh
Contact: on Teams
Office: C4-103
Office hours: by appointment.

Grade Assignments

<i>The following grading system is applied</i>		<i>Contribution to the Final Grade</i>
A	90% and above	10% by Homework
B	80 – 89%	10% by Quiz
C	70 – 79%	10% by Lab Report
D	60 – 69%	20% by Midterm Exam
F	0 – 59%	50% by the Final Exam

Parts of the course

Microsoft Teams:

All class materials, assignments, and updates will be posted on Microsoft Teams. Homework and assignments must be submitted through Teams.

Textbook:

It is essential to read the textbook both before and after each lecture to fully grasp the concepts covered. This will help deepen your understanding of the material.

Lectures:

Before diving into each new chapter, I'll review the previous one, set clear objectives for the current lesson, and walk through key concepts with examples and demonstrations. Be sure to take notes during the lecture to reinforce your learning.

In-Class Quizzes:

There will be brief quizzes at the start of each class. These quizzes are designed to help you recap and apply concepts from the previous session, either by rephrasing key ideas or solving a simple problem in a group setting. Come prepared to engage and participate.

Homework:

After each chapter, homework assignments will be given to help reinforce the material. You'll need to turn in your completed assignments within one week.

Examinations:

- The **Midterm Exam** will take place in Week 9.
- The **Final Exam** is scheduled for Week 15.

Both exams will consist of 30 multiple-choice questions and one short answer question. Make-up exams will not be offered, and absences will not be excused. For both exams, you are permitted to bring a calculator, a periodic table, one A4 sheet of handwritten notes, and pens/pencils. No other devices are allowed.

Lab:

Lab experiments will be conducted on the fourth floor of the C1 Building.

Attendance:

Full participation in the lab is mandatory. Missing any lab sessions will result in an automatic F for the course. For the class, if you miss more than 3 sessions, regardless of whether the absences are excused or not, you will be barred from taking the final exam and will receive an F for the course.

Penalty for Misconduct:

Serious penalties (e.g., one letter grade drop) will be imposed for cheating, falsifying lab data, or plagiarism. If you are found using any communication or smart devices (including smartphones and laptops) during exams—other than a calculator—you will receive an F for the course.

Working with Classmates:

Collaboration is encouraged, but copying answers from others is not acceptable. Unless an assignment specifically states that group reports are allowed, always write your answers in your own words.

Tentative Schedule

Week (Date)	Session	Lecture Material	Quizz & Exam	Homework
1 (July 7)	July 8 -9	Course Introduction Chapter 1. Introduction: Matter and Measurement		
	July 9-10	Chapter 2. Atoms, Molecules, and Ions	Quiz 1	
2 (July 14)	July 15-16	No class due to a schedule conflict		
	July 16-17	Chapter 3. Chemical Reactions and Reaction Stoichiometry	Quiz 2	
3 (July 21)	July 22-23	Chapter 3. Chemical Reactions and Reaction Stoichiometry (cont.)	Quiz 3	HW 1 assignment
	July 23-24	Chapter 4. Reactions in Aqueous Solution	Quiz 4	HW1 due
4 (July 28)	July 29-30	Chapter 4. Reactions in Aqueous Solution (cont.)	Quiz 5	
	July 30-31	Chapter 5. Thermochemistry	Quiz 6	
5 (August 4)	Aug. 5-6	Chapter 5. Thermochemistry (cont.) Review		HW 2 assignment
	Aug. 6-7	No lecture	Midterm exam	HW2 due
6 (August 11)	Aug. 12-13	Chapter 6. Electronic Structure of Atoms Review		
	Aug. 13-14	Chapter 7. Periodic Properties of the Elements	Quiz 7	
7 (August 18)	Aug. 19-20	Chapter 8. Chapter 8: Basic Concepts of Chemical Bonding	Quiz 8	
	Aug. 20-21	Chapter 9: Molecular Geometry and Bonding Theories	Quiz 9	
8 (August 25)	Aug. 26-27	Chapter 9: Molecular Geometry and Bonding Theories (Cont.)	Quiz 10	HW 3 assignment
	Aug. 27-28	No lecture	Final Exam (60 minutes)	HW3 due
9 (Sep. 1)		Deadline for grade submission		

