General Chemistry I

Year Course Offered: 2014

Semester Course Offered: Fall

Department: NS

Course Number: Chem1311

Name of Course: General Chemistry I

Name of Instructor: Chemistry faculty

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The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

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Learning Objectives (LO)

This course is a fundamental principle for majors in sciences, health sciences, and engineering; topics include inorganic, organic, biochemistry, chemical reactions, states of matter and properties, chemical bonding, structure, and descriptive chemistry.

Upon successful completion of this course, students will be able to

1. Define the fundamental properties of matter; classify matter, compounds, and chemical reactions; determine the basic nuclear and electronic structure of atoms; identify trends in chemical and physical properties of the elements using the Periodic Table.
2. Describe the bonding in simple molecules and ions; solve stoichiometric problems; write chemical formulas; write and balance equations; use the rules of nomenclature to name chemical compounds.
3. Define the types and characteristics of chemical reactions; use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems; determine the role of energy in physical changes and chemical reactions.
4. Work with peers to apply content knowledge in problem solving.

Core Objectives (CO)

General Chemistry addresses the following core objectives to ensure students develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in their lives. The core objectives meet the Texas Core Curriculum objectives for the Social and Behavioral Sciences Foundational Component Area.

- Critical Thinking Skills - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Social Responsibility - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
- Team Work - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Learning Outcomes	**CO**	**Assessment Methods**	**Criteria/Targets**
1. Define the fundamental properties of matter. Classify matter, compounds, and chemical reactions. Determine the basic nuclear and electronic structure of atoms. Identify trends in chemical and physical properties of the elements using the Periodic Table. Describe the bonding in simple molecules and ions.	CT, EQS	Exams	Students will be able to demonstrate the understanding of fundamental properties of matter. Classify matter, compounds, and chemical reactions. Determine the basic nuclear and electronic structure of atoms. Identify trends in chemical and physical properties of the elements using the Periodic Table. Describe the bonding in simple molecules and ions.
2 Solve stoichiometric problems. Write chemical formulas. Write and balance equations. Use the rules of nomenclature to name chemical compounds. Define the types and characteristics of chemical reactions.	CT, EQS	Assignment and tests.	Students will be able to Solve stoichiometric problems. Write chemical formulas. Write and balance equations. Use the rules of nomenclature to name chemical compounds. Define the types and characteristics of chemical reactions.
3. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems. Determine the role of energy in physical changes and chemical reactions. Convert units of measure and demonstrate dimensional analysis skills.	SR, COM	students will be evaluated based on quiz, lecture questions and answers.	Students will be able to use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems. Determine the role of energy in physical changes and chemical reactions. Convert units of measure and demonstrate dimensional analysis skills.

General Chemistry I - Fall 2014

Tentative schedule

ESTIMATED Schedule of Topics: Week	*Topics to be covered*
one	Chapters 1 and 2
two	Chapter 2, Chapter 3
three	Chapter 3 & exam
four	Chapter 4
five	Chapter 4, Chapter 5
six	Chapter 5
seven	Chapter 6
eight	Chapter6, Chapter 7
nine	Chapter 7 & exam
ten	Chapter 8
eleven	Chapter 8, Chapter 9
twelve	Chapter 9 & exam
thirteen	Chapter 9
fourteen	Chapter 10
fifteen	Chapter 10, Chapter 11
sixteen	Chapter 11
seventeen	**Final Exam**