

General Chemistry for Pre-Medical Students

2 Credit Hours – Preparatory Course for Medical School

Second semester 1404-1405

Course coordinator: Dr. Safizad

Mondays (13-15)

Course Overview

This course provides a concise yet comprehensive introduction to general chemistry, tailored for students entering medical school. Emphasis is placed on chemical concepts that underpin human physiology, pathology, pharmacology, and medical biochemistry. Students will develop a solid foundation in chemical principles, problem-solving skills, and the ability to apply chemistry to biological and clinical contexts.

Course Objectives

By the end of the course, students will be able to:

- Explain fundamental chemical concepts relevant to biological systems.
- Relate molecular structure to function in physiological and biochemical processes.
- Apply quantitative reasoning to solve chemistry problems relevant to medicine.
- Interpret chemical reactions in the context of metabolism, diagnostics, and therapeutics.

Session	Subject	Date	Time
1	Keys to the Study of Chemistry	1405/01/17	13-15
2	The Components of Matter	1405/01/24	13-15
3	Stoichiometry of Formulas and Equations	1405/01/31	13-15
4	The Major Classes of Chemical Reactions	1405/02/07	13-15
5	Gases and the Kinetic-Molecular Theory	1405/02/14	13-15
6	Thermochemistry: Energy Flow and Chemical Change	1405/02/21	13-15
7	Electron Configuration and Chemical Periodicity	1405/02/28	13-15

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8	Models of Chemical Bonding	1405/03/04	17-19
9	The Shapes of Molecules	1405/03/11	13-15
10	Theories of Covalent Bonding	1405/03/18	17-19
11	Intermolecular Forces: Liquids, Solids, and Phase Changes	1405/03/18	13-15
12	The Properties of Mixtures: Solutions and Colloids	1405/03/25	17-19
13	Organic Compounds and the Atomic Properties of Carbon	1405/04/01	13-15
14	Kinetics: Rates and Mechanisms of Chemical Reactions Equilibrium: The Extent of Chemical Reactions	1405/04/08	13-15
15	Acid-Base Equilibria Ionic Equilibria in Aqueous Systems	1405/04/15	13-15
16	Thermodynamics	1405/04/22	13-15