



Level One

General Chemistry (1)

Course Code	Course Num.	Course Name	Credit Hours	Lec	Lab	Tut	Prerequisites
CHE	101	General Chemistry (1)	4	3	2	1	

Objectives:

The objective of this course is to familiarize the student with the basic principles and concepts of Inorganic Chemistry.

Syllabus:

- Atomic, molecule & ions: The atomic theory, the structure of the atom, Atomic number, Masse number and Isotopes, the periodic table, Molecules and ions, Chemical formulas, Naming compounds
- Masse Relationships in chemical reactions: Atomic mass, Avogadro's number and molar mass, Molecular mass, chemical reaction and chemical equations, Amounts of reaction and reactants and products, Limiting reagents
- Reaction in aqueous solutions: General proprieties of aqueous solutions, Acid-Base reactions, Concentration solutions, Gravimetric Analysis, Acid Base Titrations.
- Gases: Substance that exist as Gases, Pressure of a Gas; The Gas Laws, The ideal gas equation, Gas Stoichiometry, Dalton's Law of Partial Pressures; The kinetic molecular theory of gases.
- Chemical Kinetics: The rate of reaction, the rate Law, Activation Energy and temperature dependence of rate constants, reaction mechanisms, Catalysis.
- Chemical equilibrium: The concept of equilibrium, equilibrium constants, Factors that affect chemical equilibrium.
- Thermodynamics: First Law: State functions, change in enthalpy, work and heat, Enthalpy of chemical reactions, Calorimetry, Second Law: Entropy, Gibbs free energy, Free energy and chemical equilibrium

References:

- General Chemistry, The essential Concepts Fifth Edition, Raymond CHANG, McGraw Hill international Edition 2008.
- Chemistry Ninth Edition, Raymond CHANG, Williams College McGraw Hill, Higher Education
- Fundamentals of Chemistry, Fifth Edition, Goldberg, McGraw Hill international Edition.

