



جامعة الحكمة، إيلورن - نيجيريا

**AL-HIKMAH UNIVERSITY, ILORIN, NIGERIA**

Adeta Road, Adewole Housing Estate, P.M.B. 1601, Ilorin

.....learning for wisdom and morality.....

**CENTRE FOR ICT AND DISTANCE LEARNING (IDL)  
e-CONTENT DEVELOPMENT (DL) UNIT**

#### **A. Course Lecturer's Detail**

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#### **B. Faculty, Department and Programme**

Faculty: Education

Department: Science Education

Programme: Chemistry Education

#### **C. Course Title, Code, Credit Unit and Outline**

SN	Course Title	Course Code	Credit Unit	Course Outline
1	General Chemistry I	CHM 111	3	Atoms and Molecules, Chemical Formulae, Equation, Reaction and Stoichiometry; Periodic Table and Periodic Properties; Solution of Solids, Liquids and Gases; Colligative Properties of Solution; Equilibra and Thermodynamics; Chemical Kinetics; Introductory Electrochemistry.

#### **D. Topics to be Taught**

##### **1. CHM 111 : General Chemistry I (3C)**

*Atoms and Molecules:* Development of atomic theory, Atomic Structure, Electronic configuration of atoms, Isotopy, Determination of atomic mass, Types and nature of molecules.

*Chemical Formulae, Equation and Reaction:* Symbols and chemical formulae, Naming inorganic compounds, Writing and balancing chemical equations, Classification of chemical reactions, Reaction stoichiometry.

*Periodic Table and Periodic Properties:* Periodic law, Classification of elements in the periodic table, Diagonal relationship in the periodic table, Atomic radii, Ionic radii, Ionization energy, Electronegativity, Electron affinity.

*Solution of Solids, Liquids and Gases:* Forms of solution, Solution of gases in liquid and Henry's law, Solution of liquid in liquid, Solution of solid in liquid, Continuous and discontinuous solubility curve.

*Colligative Properties of Solution:* Definition, Vapour pressure lowering and Raoult's law, Molecular weight determination, Vapour pressure curve, Boiling point elevation, Ebullioscopic constant.

*Equilibria and Thermodynamics:* Reversible process, Law of mass action, Thermodynamic derivation of equilibrium constant, Relationship between  $K_p$  and  $K_c$

*Chemical Kinetics:* Chemical reaction rate, Factors affecting reaction rate, Rate laws, Integrated rate laws, Collision theory.

*Introductory Electrochemistry:* Balancing redox reactions, Galvanic cells, Batteries and fuel cells, Electrolysis.