

نموذج وصف مقرر دراسي

Course Designation	Chem 109	١٠٩ كيم	رقم المقرر ورمزه
Course Name	General Chemistry (for Health Sciences)	كيمياء عضوية (علوم صحية)	اسم المقرر
No. of Credits	2 + 1 + 0	٠ + ١ + ٢	عدد الوحدات الدراسية المعتمدة
Prerequisites			متطلب سابق
Co-requisite Course			متطلب مصاحب

Course Description:

Introduction (Types of chemical bonds - Hybridization - Inductive effect - polarization, and Stability of carbocations - Classification of organic compounds - Types of chemical reactions). **Aliphatic Hydrocarbons** (Classes of hydrocarbons - Nomenclature - Isomerism - Physical properties - Preparation and reactions of saturated and unsaturated hydrocarbons). **Aromatic compounds** (Aromaticity and Hückel's rule - Nomenclature - Electrophilic aromatic substitution reactions - Effects of substituents on electrophilic aromatic substitution reactions - Side-chain reactions). **Alcohols, Phenols and Ethers** (Structure, classifications and nomenclature - Physical properties - Preparation and reactions of alcohols, phenols and ethers - Alcohols with More Than One Hydroxyl Group; glycols). **Aldehydes and Ketones** (Structure and Nomenclature - Physical properties - Preparation and reactions of aldehydes and ketones). **Carbohydrates** (Definitions and Classification - Monosaccharides - Reactions of Monosaccharides - Disaccharides - Polysaccharides). **Carboxylic acids and Their Derivatives** (Structure and Nomenclature - Physical properties - Acidity of Carboxylic acids - Preparation and reactions of carboxylic acids). **Amines** (Structure - Nomenclature - Physical properties - Basicity of amines - Preparation and reactions of amines). **Amino Acids, Peptides, and Proteins** (Sources, classification and Structure - The acid-base Properties of Amino Acids - Reactions of amino acids - Structure of proteins). **Nucleic Acids** (Chemical Structure: (General structure (Nucleoside, Nucleotide and Nucleic acids) - DNA; structure - RNA; structure and types).

Experiments

The experimental part includes preparation and identification of some organic compounds including: Instruction and Equipment and Safety, Solubility, Extraction, Aliphatic hydrocarbons (Bonding), Aromatic hydrocarbons, Hydroxy compounds (Alcohols & Phenols), Aldehydes & Ketones, Carbohydrates, Carboxylic acid & Their derivatives, Preparation of Aspirin, Nitro and Amino compounds, De-amination of amino acids.

Textbooks:

- *Organic chemistry: A short course* by I Harold Hart, David J. Hart and Leslie E. Craine, Houghton Mifflin Company, USA., 2012.
- *Elements of Organic Chemistry (second edition)* is written by Isaak Zimmerman and Henry Zimmerman and published by Macmillan Publishing Co., Inc. New York in 1983.

- أسس الكيمياء العضوية - أ.د. / سالم بن سليم الذياب - الناشر: مؤسسة نافذة

اعتمد بموافقة مجلس الكلية بجلسته :
توقيع رئيس القسم :

