



وكالة الجامعة للشؤون التعليمية
البرامج الدراسية والتطوير

(5)

مختصر توصيف الكيمياء العضوية

Organic Chemistry

(Course Syllabus)

	كيمياء عضوية	:
	CHEM-211	:
	CHEM-101 الكيمياء العامة	:
	-	:
		:
	3	:
Module Title:	Organic Chemistry	
Module ID:	CHEM-211	
Prerequisite (Co-requisite) :	General Chemistry, CHEM-101	
Co-requisite :	-	
Course Level:	3 rd level	
Credit Hours:	3	

:(Course Information) *

Module Description

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The course covered the studying of the basics of organic chemistry that including description of carbon element and its derived compounds, its hybridization and structures, how the carbon element link with himself and with other elements to form the different hydrocarbons and the different heterocyclic rings. Reactions of organic compounds and their suggested mechanism. The classifications and reactions of aliphatic and aromatic hydrocarbons. The compounds containing functional groups such as alkyl halides, alcohols, ethers, phenols, aldehydes, ketones, amines and carboxylic acids. Analysis of the organic molecules in terms of their optical and spatial chemistry. The use of spectroscopic ways to predict the compound structural formulas.

The practical part covered the qualitative analysis of some organic compounds

Module Aims

أهداف المقرر :

1	Studying of the carbon element and its derived compounds, its hybridization and structures	
2	Studying of the hydrocarbons and heterocyclic compounds, chemical and physical characteristics, classifications, nomenclatures and uses.	
3	Studying the substitution, elimination and addition reactions of organic compounds and their mechanisms.	
4	Studying the physical and chemical characteristics of the compounds containing functional groups.	1
5	Studying the physical and chemical characteristics of aromatic compounds and their classifications. As well as the structure of benzene.	2

6	Studying the analysis of the organic molecules in terms of their optical and spatial chemistry.	3
7	Studying the use of spectroscopic ways to predict the compound structural formulas.	4

Learning Outcomes:
مخرجات التعليم:

1	Knowledge about the hybrid orbitals of carbon and hybrid orbitals of nitrogen and oxygen and distinguishes their derived compounds.	
2	Knowledge about organic functional groups.	
3	Knowledge about the structure formulas of the organic compounds.	
4	Knowledge about the nomenclature of the organic compounds (IUPAC and old systems).	
5	Knowledge about the comparison between the functional groups and their physical and chemical characteristics	
6	Knowledge about the classification of organic compounds on the basis of their components and bonds and isomerism.	
7	Knowledge about the structural isomerism of organic compounds and its effect on the chemical reactions.	

Course Contents:

ساعات التدريس (Hours)	الأسابيع (Weeks)	(Subjects)
4	2	Orbitals and their role in covalent bonding
2	1	Structural isomerism, nomenclature and alkanes
2	1	Stereochemistry
2	1	Alkyl halides: substitution and elimination reactions
2	1	Alcohols, ethers and related compounds
2	1	Alkenes and alkynes
2	1	Aromaticity, benzene and substituted benzenes
2	1	Aldehydes and ketones
2	1	Carboxylic acids and derivatives
2	1	Amines
2	1	Polycyclic and heterocyclic aromatic compounds
4	2	Spectroscopy
Practical Part:		
28	14	Qualitative assays for some organic compounds

Textbook and References:

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ISBN	Publishing Year	Publisher	اسم المؤلف (رئيسي) Author's Name	Textbook title
978-0-757-54473-6,	2008	Kendall Hunt Pub Co	Kenneth F. Cerny, Marietta H. Schwartz	Organic Chemistry
	Publishing Year	Publisher	اسم المؤلف (رئيسي) Author's Name	Reference
13: 978-0-387-44897-8	2007	Springer	Francis A. Carey and Richard J. Sundberg	Advanced Organic Chemistry: Part A: Structure and mechanisms
0-07-290501-8	2000	McGraw-Hill	Francis A. Carey	Organic Chemistry

