

Republic of Iraq
Ministry of higher education and
scientific research
University of Warith al-anbiyaa
Collage of pharmacy



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة وارث الأنبياء عليه اسلام
كلية الصيدلة

Academic Course Description

Organic Chemistry

Course Description Template

1-Course Title	
Organic Chemistry	
2-Course Code	
OC124	
3- Semester / Academic Year	
Second Semester 2025–2026	
4- Date of Preparation	
28/01/2026	
5- Attendance Mode	
In-person	
6- Credit Hours:	
Units: 4 Theoretical: 45 Practical: 30	
7- Course Coordinator:	
Name: Zainab Saad Abdulameer Email: zaineb.sa@uowa.edu.iq	
8- Course Objectives	
Course Learning Objectives	this course provides a fundamental understanding of organic chemistry, with an emphasis on the relationship between the structure of carbon-based organic molecules and their physical and chemical properties. The curriculum progresses logically from the basic principles of chemical bonding to the chemistry of the major hydrocarbon families, the three-dimensional structure of molecules, important functional groups, and finally to the distinctive chemistry of aromatic compounds
9- Teaching and Learning Strategies	
Strategies	Teaching strategies include lectures, presentations, educational videos, discussion sessions, and laboratory experiments to achieve the intended learning outcomes.

10- Course Structure					
week	hours	topic	Intended Learning Outcomes	Learning methods	Assessment methods
1	3	introduction	Provides an overview of atomic and molecular orbital hybrid orbitals, intermolecular forces, polarity, as well as the structure and physical properties of molecules.	-Lectures -Presentation -Educational videos -Laboratory experiments	- Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports
2-3	4	Alkanes and methane	understanding the importance of alkanes in organic synthesis and their other applications, including the solubilization of organic compounds	-Lectures -Presentation -Educational videos -Laboratory experiments	- Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports
4	4	Alkenes and dienes.	-Understanding the structure of alkenes and dienes and the nature of double bonds. -Studying carbon hybridization and the geometric shape of molecules. -Identifying their physical and chemical properties. -Understanding their major reactions and methods of preparation. -Highlighting their importance and industrial applications	-Lectures -Presentation -Educational videos -Laboratory experiments	- Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports
5	3	Alkynes	understanding the structure of alkenes, their properties, reactions, and industrial applications	-Lectures -Presentation -Educational videos -Laboratory experiments	- Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports

6	3	Cycloalkanes	<p>Cyclic alkenes are unsaturated hydrocarbons that contain a double bond within a carbon ring. They are characterized by a closed ring of carbon atoms and exhibit chemical properties similar to those of open-chain alkenes.</p> <p>Objectives of studying cyclic alkenes:</p> <ol style="list-style-type: none"> 1-Understanding the structure of the ring and its stability. 2-Studying their physical properties. 3-Identifying their chemical reactions. 4-Learning about their applications 	<ul style="list-style-type: none"> -Lectures -Presentation -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports
7-8-9	8	Stereochemistry I & II	<p>studying the three-dimensional arrangement of atoms in molecules and its effect on their properties and chemical behavior.</p> <p>Objectives:</p> <ol style="list-style-type: none"> 1-Understanding stereoisomers (optical and geometric). 2-Learning the effect of spatial structure on drug activity and properties. 3-Applying these concepts in drug design and analysis 	<ul style="list-style-type: none"> -Lectures -Presentation -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports
10	3	Alkyl halides.	The study of chelates and halides aims to	<ul style="list-style-type: none"> -Lectures -Presentation 	<ul style="list-style-type: none"> - Written exams - Oral exams

			<p>understand their chemical structure and distinctive properties, as well as the chemical reactions they undergo. The research also focuses on their practical applications in the laboratory and industry, particularly in chemical analysis for the determination of various metals and ions. Their importance extends to industrial applications, including the pharmaceutical and chemical industries, where they play a key role in the production of certain compounds and active substances.</p>	<ul style="list-style-type: none"> -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Quizzes / Daily tests - Laboratory reports
11-12	6	Alcohols and ethers.	<p>the study of alcohols and ethers focuses on understanding their chemical structure and physical and chemical properties, such as boiling point, solubility, and polarity. It also emphasizes their chemical reactions, including oxidation, addition, and substitution reactions, which help predict their behavior under various conditions. These compounds are important in practical and industrial</p>	<ul style="list-style-type: none"> -Lectures -Presentation -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports

			<p>applications, as alcohols are used as solvents and starting materials in chemical and pharmaceutical industries, while ethers serve as solvents and intermediates in chemical preparations. The study of these compounds aims to equip students with the knowledge necessary to handle them and understand their vital role in organic and pharmaceutical chemistry</p>		
13	4	Phenols	<p>The study of phenols is an important part of organic chemistry, aiming to understand their chemical structure and physical and chemical properties, such as acidity, solubility, and reactivity. The focus is also on their characteristic reactions, including reactions with bases, oxidation, and electrophilic substitution on the aromatic ring, to understand their behavior under different conditions. Phenols are significant in industrial and medical applications, as they are used in the production of</p>	<ul style="list-style-type: none"> -Lectures -Presentation -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports

			<p>pharmaceuticals, disinfectants, and aromatic compounds, and also serve as intermediate compounds in the preparation of various organic substances. The study aims to provide students with the practical and theoretical knowledge necessary to handle these compounds and understand their vital role in organic and pharmaceutical chemistry</p>		
14-15	7	Aromatic Hydrocarbons	<p>the study of aromatic hydrocarbons focuses on understanding their chemical structure, particularly the stable benzene ring, and their unique physical and chemical properties. The research also emphasizes their characteristic chemical reactions, such as electrophilic aromatic substitution reactions, which allow prediction of their behavior under various conditions. These compounds are important in industrial and medical applications, as they are used in the production of pharmaceuticals, dyes, perfumes, and plastics.</p>	<ul style="list-style-type: none"> -Lectures -Presentation -Educational videos -Laboratory experiments 	<ul style="list-style-type: none"> - Written exams - Oral exams - Quizzes / Daily tests - Laboratory reports

			The study of aromatic hydrocarbons aims to provide students with the knowledge necessary to understand their structure, chemical behavior, and practical applications in organic and pharmaceutical chemistry		
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11- Course Assessment

The total mark (100) is distributed among daily preparation, quizzes, oral examinations, monthly assessments, written examinations, laboratory reports, and other evaluation activities.

12- Teaching and Learning Resources

Required Textbook	1-Organic Chemistry: by John McMurry 10th Ed, 2023 2-Organic Chemistry: Structure and Function (8th Edition) by Vollhardt and Schore. 3-Organic Chemistry by Robert T. Morrison and Robert N. Boyd
Maine references (sources)	1-Organic Chemistry: by John McMurry 10th Ed, 2023 2-Organic Chemistry: Structure and Function (8th Edition) by Vollhardt and Schore. 3-Organic Chemistry by Robert T. Morrison and Robert N. Boyd
Recommended supporting books and references	As mentioned above
Electronic references , websites	Google, Scholar