	وزارة التعليم العالي والبحث العلمي **جامعة المستقبل** كلية العلوم قسم الكيمياء الحياتية	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information **معلومات المادة الدراسية**			
Module Title	Organic chemistry (part 2)		**Module Delivery**
Module Type	Basic		• ☒ **Theory** • ☒ **Lecture** • ☒ **Lab** • ☐ **Tutorial** • ☐ **Practical** • ☐ **Seminar**
Module Code	UOMU036242		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	2	**Semester of Delivery**	2
Administering Department	Dept. of Biochemistry	**College**	College of Science
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	1. Provide students with a comprehensive understanding of the structure, properties, and reactivity of organic molecules. 2. Develop skills in the application of organic reaction mechanisms to solve chemical problems. 3. Explore the synthesis, analysis, and functionalization of organic compounds. 4. Introduce modern techniques in organic chemistry, including spectroscopy and chromatography.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	On successful completion of this module, students will be able to: 1. Identify and describe the structures and functional groups of organic molecules. 2. Predict the reactivity and mechanisms of organic reactions. 3. Design synthetic pathways for simple and complex organic molecules. 4. Apply analytical techniques to characterize organic compounds. 5.
Indicative Contents **المحتويات الإرشادية**	Indicative content includes the following. 1- Introduction to Organic Chemistry Basic concepts: Structure of organic molecules, hybridization, bonding, and molecular geometry. Functional groups: Overview of common functional groups. 2- Aromatic compounds Structure, properties, and reactions. 3- Alcohols and Ethers Preparation and reactivity of alcohols and ethers. Oxidation and reduction of alcohols. 4- Aldehydes and Ketones

	Nomenclature, structure, and reactivity of aldehydes and ketones. Nucleophilic addition reactions and their mechanisms. 5- Carboxylic Acids and Derivatives Structure, acidity, and preparation of carboxylic acids. Reactions of carboxylic acid derivatives (amides, esters, anhydrides).

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	1- Lectures Lectures will provide a structured overview of key concepts and theories in organic chemistry. Students will be introduced to fundamental topics through visual aids, diagrams, and real-world examples to enhance understanding. 2- Interactive Discussions In-class discussions and Q&A sessions will encourage student engagement, promoting critical thinking and collaborative learning. Students will be encouraged to ask questions and discuss complex concepts with their peers and the instructor. 3- Laboratory Work Hands-on laboratory sessions will enable students to apply theoretical principles in a practical environment. Experiments will focus on synthesizing, purifying, and characterizing organic compounds using standard laboratory techniques (e.g., distillation, chromatography, and spectroscopic analysis). 4- Group Projects and Presentations Group work will encourage teamwork and communication skills. Students will collaborate on small research projects or problem-solving exercises, which they will present to the class, fostering peer learning. 5- Formative Assessments and Feedback Continuous formative assessments such as quizzes, homework assignments, and laboratory reports will be used to monitor student progress. Detailed feedback will be provided to help students improve and clarify misunderstandings.

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	79	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	5.2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	96	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	6.4
Total SWL (h/sem)	175		

الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	1	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects/Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly theory. Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to organic chemistry
Week 2	Aromatic compounds: definition, structure, nomenclature, classification
Week 3	Aromatic compounds: physical and chemical properties, conformations
Week 4	Aromatic compounds: preparation and reactions
Week 5	Alcohols: structure, nomenclature, geometric isomerism
Week 6	Alcohols: physical and chemical properties, preparation, mechanisms and reactions
Week 7	Ethers: Structure and properties, nomenclature, preparation,
Week 8	Ethers: mechanisms and reactions
Week 9	Mid Exam.
Week 10	Aldehyde and ketones: structure, nomenclature, acidity
Week 11	Aldehyde and ketones: physical properties, preparation, reactions
Week 12	Carboxylic Acids: Structure, acidity, and preparation of carboxylic acids.
Week 13	Carboxylic Acids: Reactions of carboxylic acid derivatives (amides, esters, anhydrides).
Week 14	Ethers: Structure and properties, nomenclature, preparation, reactions
Week 15	Comprehensive review

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-2	Extraction and Purification of Organic Compounds
Week 3-4	Identification of Functional Groups
Week 5-6	Qualitative tests for: alcohols,)
Week 7-8	Qualitative tests for: aldehyde
Week 9-10	Qualitative tests for: ketones
Week 11-12	Synthesis and Characterization of Esters
Week 13	Esterification reaction between alcohol and carboxylic acid
Week 14	Discussion on ester odor and applications in flavor chemistry
Week 15	Final exam.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Organic Chemistry by Jonathan Clayden, Nick Greeves, and Stuart Warren (**2nd Edition**): Offers in-depth explanations of organic chemistry concepts and real-life applications. 2012.	Yes
Recommended Texts	March's Advanced Organic Chemistry by Michael B. Smith and Jerry March (6th Edition): A reference text for advanced topics and detailed reaction mechanisms. 2007.	No
Websites	**Khan Academy**: Video tutorials on organic chemistry concepts and reaction mechanisms. **ChemSpider**: A free chemical structure database providing information on properties, reactions, and spectra of organic compounds.	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**راسب (قيد المعالجة)**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.