	Ministry of Higher Education and Scientific Research - Iraq Al-Nahrain University College of Science Forensic Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	organic chemistry	**Module Delivery**	
Module Type	CORE		☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☒**Practical** ☒**Seminar**
Module Code			
ECTS Credits	6		
SWL (hr/sem)	**150**		

Module Level		**Semester of Delivery**	1
Administering Department		**College**	
Module Leader	Dr Rasha Saad Jwad	**e-mail**	rasha.saad@nahrainuniv.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	PhD
Module Tutor	Saja Subhi Abbood	**e-mail**	saja@nahrainuniv.edu.iq
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

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. Equip students with a foundational understanding of organic chemistry. 2. Cover essential topics such as chemical bonding, structure, nomenclature of organic compounds, reactivity of basic functional groups and the chemistry of different functional groups. 3. Exploring molecules of biological significance. 4. Serve as a universal baseline of organic chemistry knowledge for incoming first-year students. 5. Construct the practical skills of organic chemistry for students.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The student will be able to recognize and name different types of organic molecules based on their structure, functional groups, and systematic nomenclature rules. 2. Describe the bonding and shape of organic molecules: Understanding the types of bonds present in organic molecules (e.g., covalent bonds) and how these bonds influence the three-dimensional shape or geometry of the molecules. 3. Understanding the factors that influence the reactivity of organic molecules, such as the presence of functional groups, steric hindrance, and electronic effects. 4. Being able to describe the physical and chemical properties of different functional groups, as well as methods for preparing them and their typical reactions. 5. Being able to use the information about organic compound structure, bonding, reactivity, and functional groups to predict and explain the outcomes of organic reactions and to solve problems related to organic chemistry.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Structure and bonding in organic molecules: This covers the basics

	of molecular structure, including the shapes of organic molecules and the nature of chemical bonds within them. 2. Functional groups: Organic molecules are classified based on functional groups, which are specific arrangements of atoms within the molecule that confer characteristic chemical properties. 3. Nomenclature: Organic chemistry has a systematic way of naming compounds, which is essential for communication within the field. This includes the IUPAC (International Union of Pure and Applied Chemistry) naming system. 4. Isomerism: Organic molecules can exist as different isomers, compounds with the same molecular formula but different structural arrangements or spatial orientations, leading to distinct chemical properties. 5. Organic reactions: Understanding how organic reactions occur at the molecular level is fundamental to organic chemistry. 6. Stereochemistry: This branch of organic chemistry focuses on the spatial arrangement of atoms within molecules and how it influences the properties and reactivity of compounds. 7. Bioorganic chemistry: This interdisciplinary field explores the chemical processes occurring in living organisms, including the structures and functions of biological macromolecules like proteins, nucleic acids, and carbohydrates.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The primary approach for introducing this unit will involve fostering student engagement through active participation in homework exercises, aiming to enhance and broaden their critical thinking abilities. This will be facilitated through class sessions and interactive tutorials, supplemented by the exploration of simple experiments designed to incorporate sampling activities tailored to students' interests.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	102	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	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**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to organic chemistry: Hybridized Atomic Orbitals
Week 2	Acids and bases
Week 3	Saturated hydrocarbons
Week 4	Unsaturated hydrocarbons
Week 5	Alkyl halides
Week 6	Alcohols
Week 7	Amines
Week 8	Ethers
Week 9	**Mid Exam**
Week 10	Aldehydes and Ketones
Week 11	Carboxylic acids and their derivatives

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Week 12	Aromatic compounds
Week 13	Phenols
Week 14	Bioorganic molecules
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Lab safety guide and laboratory glass wares
Week 2	Lab 2: Introduction to organic chemistry compounds
Week 3	Lab 3: Crystallization
Week 4	Lab 4: Liquid-liquid extraction
Week 5	Lab 5: Determination of melting point and boiling point
Week 6	Lab 6: TLC; Ink Investigation
Week 7	Lab 7: Iodine Fingerprint or Amino Acid Fingerprints
Week 8	Lab 8: identification of chemical compounds

Lab Staff:

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Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Bruice, Paula Yurkanis. (2014). Organic Chemistry, 7th ed. New Jersey: Pearson Education International, pages 1392.	Yes
Recommended Texts	McMurry, John E., (2016). Organic Chemistry, 9th ed., Cengage Learning, pages 1518.	No
Websites	https://www.khanacademy.org/science/organic-chemistry https://www.masterorganicchemistry.com/	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB 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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي