MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Organic Chemistry**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BCE125				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Salwa Shamran Jasim		**e-mail**	salua@kecbu.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecture		**Module Leader's Qualification**	M.Sc.	
Module Tutor	Mariam Qais		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	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 Objectives أهداف المادة الدراسية	1. Engineering requires applied organic chemistry to get more benefit of it. 2. The study of organic chemistry aims to provide deep understanding of fundamental principles that govern the nature of chemical reactions and facilitate challenges to design and create fine chemicals that benefit society. 3. Biochemical engineers employ chemistry concepts to address problems with the manufacture or usage of chemicals, pharmaceuticals, food, and a variety of other items. 4. Organic chemistry is an important fundamental topic for engineers, in understanding the properties of materials and solutions and the reaction of materials with the environment. 5. Encourage Students through practical experience and academic courses to learn how to design and create environmentally friendly chemical processes involved in water treatment.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize the relationship between molecular structure and chemical and physical properties. 2. Develop practical experience in solvent extraction, distillation, titration & gravimetric analysis. 3. Learn to master the ability to manipulate basic mathematical and critical thinking skills to analyze chemical problems and devise a logical approach to solve the problem, also analyze and interpret graphs as they apply to chemical problems. 4. Use the rules of nomenclature to name chemical compounds. 5. Gain knowledge of most important organic compound (polymers) 6. Teaching laboratory skills that will give students confidence in their ability to obtain high-quality data to qualify them to work in industry, chemical analysis and laboratories
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Organic Chemistry</u> <u>Part A -</u> Basic Principles of Organic Chemistry, Preparation, Properties and Reactions of Alkanes, alkenes and alkynes [8 hrs] <u>Part B -</u> Preparation, Properties and Reactions of Alcohols, Phenols, ester & Ethers [8 hrs.] <u>Part C -</u> Preparation, Properties and Reactions of Aldehydes, Ketones & Amines[8hrs] <u>Part D -</u> Properties and uses of some important polymers, Reaction of heterocyclic Compounds + substitution on aromatic compounds. [6 hrs] <u>Part E - Practical Experience:</u> Experiment of organic chemistry lab. [2 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	32	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #3, #6 and #8, #11
	Assignments	2	10% (10)	2 and 12	LO #4, #5 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #11, #12and #13
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Organic Chemistry
Week 2	Chemical reactions and chemical equations
Week 3	Bonding in Carbon Compounds and hybridization
Week 4	Classification of Alkane and its stereochemistry
Week 5	Petroleum distillation and cracking
Week 6	Explain the properties, preparation and chemical reaction of alkane
Week 7	Mid exam
Week 8	Explain the properties, preparation and chemical reaction of alkene & alkyne
Week 9	Polymers & polymerization reactions
Week 10	Preparation, uses & Reaction of Alcohol
Week 11	Preparation, uses & Reaction of Phenols, Ether and Ester
Week 12	Preparation, uses & Reaction of Aldehydes and Ketones
Week 13	Preparation, uses & Reaction of carboxylic acids &their derivatives
Week 14	Mid exam + Reaction of Amides
Week 15	Reaction of heterocyclic Compounds + substitution on aromatic compounds
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Safety rule + Volumetric measurement glassware
Week 2	Lab 2: Experiment of boiling point determination.
Week 3	Lab 3: Experiment of melting point determination
Week 4	Lab 4: Experiment of mixed melting point
Week 5	Lab 5: Experiment of Recrystallization
Week 6	Lab 6: Experiment of Sublimation
Week 7	Lab 7: Experiment of Extraction
Week 8	Lab 8: Experiment of Simple Distillation
Week 9	Lab9: Experiment of Fractional distillation
Week 10	Lab 10: preparation of acetic acid

Week 11	Lab11: mid exam
Week 12	Lab 12: Experiment of Preparation of Dinitrobenzene & tert- butyl chloride
Week 13	Lab13: Qualitative Tests for Carbonyls
Week 14	Lab 14: Qualitative test for Alcohol
Week 15	Lab 15: preparation of aspirin

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	➢ Prentice Hall, Ralph H. Petrucci, William S. Harwood & Geoffrey Herring; General Chemistry (Principles & Modern Application); Upper Saddle River, New Jersey, 2002. ➢ Timothy M. Dwyer; Katherine J. Denniston; General Organic &Biochemistry; McGraw- Hill; New York; 5th addition ;2007.	Yes
Recommended Texts	General Chemistry: Principles and Modern Applications by Petrucci, Herring, Madura, Bissonnette, 10th edition (2011, ISBN 9780132064521) or 11th edition (2017, ISBN 9780132931281)	No
Websites	https://chemistrydocs.com/college-university-exams/comprehensive-chemistry-jee-advanced/	

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.