INTRODUCTION TO CHEMISTRY DESCRIPTION FORM

نموذج وصف مدخل الى الكيمياء

Module Information معلومات المادة الدراسية			
Module Title	Introduction to Chemistry		**Module Delivery**
Module Type	Support		• ☒ **Theory** • ☒ **Lecture** • ☒ **Lab** • ☐ **Tutorial** • ☐ **Practical** • ☐ **Seminar**
Module Code	UOMU038013		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	**Semester of Delivery**	1
Administering Department	Forensic Science	**College**	**College of Science**
Module Leader	Dr. Aseel Amer	**e-mai**	Aseel.Amer@uomus.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name		**e-mail**	E-mail

Scientific Committee Approval Date	08/06/2023	**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**	The primary objective of this course is to acquire basic concepts, principl and techniques of modern analytical chemistry that would empower stude with an analytical mind set and the abilities to solve diverse analytical problems in an efficient and quantitative way that conveys the importanc accuracy and precision of the analytical results. On successful completion this course, students will be able: 1. To develop an understanding of the range and uses of analytical metho in chemistry. 2. To establish an appreciation of the role of chemistry in quantitative analysis 3. To develop an understanding of the broad role of the chemist in measurement and problem solving for analytical tasks. 4. To provide an understanding of chemical methods employed for elemental and compound analysis. 5. To provide experience in some scientific methods employed in analytic chemistry. 6. To develop some understanding of the professional and safety responsibilities residing in working on chemical analysis.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After attending this course in Analytical Chemistry, **t**he students have to able to develop a basic knowledge of main principles of analytical meth as follows - To understand qualitative and quantitative properties of solutio understanding all kinds of analytical concentrations. - To describe and explain chemical equilibriums of acid base reactio

	✚ To know basic definitions, properties and nomenclature of alk alkenes, alcohol etc. ✚ Understanding the principles of gravimetric and specrochem methods ✚ Understanding the acid/base reactions and titration methods Effectively teach practical science through the context of analytical chemistry Design problem solving activities to challenge student understanding of analytical chemistry Understanding the safe handling of chemicals and the principles apparatu and unit operation in analytical chemistry .
Indicative Contents **المحتويات الإرشادية**	

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 presented during the class, home works and quizzes. Furthermore, encourage the student participation in panel discussion.

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	92	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	7
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	58	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	6.5
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

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
Summative assessment	**Midterm Exam**	2 hr	30% (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	Chemicals, Apparatus, and Unit Operations of Analytical Chemistry
Week 2	Concentrations of solutions: molarity, normality, part per million and percentage
Week 3	Aqueous solutions: solubility and Chemical Equilibria
Week 4	
Week 5	Gravimetric method of analysis
Week 6	Acid and Bases: pH buffer acid-base and titration
Week 7	Introduction to Spectrochemical Methods
Week 8	The nature of chelation: Equilibria in solution of chelating ligands. Conditions for chelation.
Week 9	Med exam
Week 10	Organic Chemistry: Alkanes

Week 11	Alkenes and Alkynes, Nomenclature of Alkenes and Alkynes
Week 12	Aromatic compounds: Nomenclature of Benzene Derivatives
Week 13	Structure and Properties of Alcohols: Ethers: Thiols
Week 14	Final exam
Week 15	Final exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Lab 1: Safety rules and Laboratory equipments
Week 2	Lab 2: PH and indicators
Week 3	Lab 3: Acid base titration
Week 4	Lab 4: Preparation of sodium hydroxide
Week 5	Lab 5: Effect of concentration on reaction rate
Week 6	Lab 6: Preparation and reaction of barium peroxide
Week 7	Lab 7: Calculation the percentage of water in hydrated salt

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	1. Fundamental of analytical chemistry: Nine edition, Skoog	Yes
Recommended Texts	Fundamentals of chemistry: Fourth Edition, David E. Goldberg	No
Websites	Different websites	