Republic of Iraq
Ministry of Higher Education
and Scientific Research
AL-Mustaqbl University
College of Sciences
Department of medical Biotechnology

جمهورية العراق
وزارة التعليم العالي والبحث
العلمي
جامعة المستقبل
كلية العلوم
قسم التقنيات الاحيائية

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Analytical chemistry**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOMU0307013**				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level		**UGI**	**Semester of Delivery**		**1**
Administering Department		**Type Dept. Code**	**College**	**Type College Code**	
Module Leader	**Zahraa Hazim Hamid**		**e-mail**	**E-mail** zahraa.hazim.hamid@uomus.edu.iq	
Module Leader's Acad. Title		**Lecturer**	**Module Leader's Qualification**		**M.Sc**
Module Tutor	**Name (if available)**		**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. This course is designed to give students not majoring in the essential background in analytical chemistry. 2. Evolution to understand lab tests. 3. The material covered includes basic chemical concepts and

	fundamental principles of analytical chemistry. 4. The role of analytical chemistry in our life. 5. Recognized the relationship between theoretical and practical. 6. Recognizing between analytical chemistry and other sciences. 7. Learning tests and how to use apparatuses.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-Give an introduction of analytical chemistry.** 2. List various experiments that proofed in the lab. 3. Summarize Traditional Approaches to the Study relationship between analytical chemistry with our life. 4. Explain and understanding the keywords in the subject 5. Define all terms in the lectures. 6. Illustrated the various analysis types
Indicative Contents المحتويات الإرشادية	In lecture lab 1-5 they will need (10hr). In lecture lab 7- 13 they will need (20 hr). In lecture lab 15 they will need (10hr).

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: 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 أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**46**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**86**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**5.7**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	5	2, 6, 11	1 and2, 3-8, 10
	Assignments	2	10	10 and 14	3 and 10
	Projects / Lab.	2	20	Continuous	All
	Report	1	5	15	12
Summative assessment	Midterm Exam	2h	10	7	2,4, 7-12
	Final Exam	3h	50	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1-2	Atoms & Electrical Structure/Periodic Table
Week 3-4	Chemical Bonding
Week 5-6	Formula Masses / The Molecular Formula
Week 7-8-9	Acid Base Theory/Ionization constant/Auto-ionization water/ Measurement of PH
Week 10-11-12-13	Chemical Quantitative Analysis /Standard Solution/ Titration of Acid Base Indication.
Week 14-15	Buffers/Bio-Chemical Buffers

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
1-2	General Introduction (Chemicals, Instruments)
3-4	Introduction of Analytical Analysis
5-6-7	Qualitative Analysis of Cations & Aions
8-9	Preparation of Solutions
10-11	Titration Analysis
12-13	Acid – Base Titrations
14-15	Precipitation Titrations

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Analytical Chemistry,Gray D. Christain ,Wiley,6thedition,2004**	
Recommended Texts	**❖ Modern Analytical Chemistry ,david Hervey, Ist edition,2000** **❖ Organic Chemistry note,AN,online, 2006.**	
Websites		

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.