MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**Biochemistry**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR23003				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	2		**Semester of Delivery**	1	
Administering Department	Forensic Evidence		**College**	Science	
Module Leader	Mohammad Abbas Jabr		**e-mail**	mohammed.jebur@uowa.edu.iq	
Module Leader's Acad. Title	Assistant Lecture		**Module Leader's Qualification**	Master	
Module Tutor	Mohammad Abbas Jabr		**e-mail**	mohammed.jebur@uowa.edu.iq	
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Scientific Committee Approval Date	2026-9-16		**Version Number**	1.0	

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

Department Head Approval **Dean of the College Approval**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1-This module aims to teach you core concepts in biochemistry including topics on structure of proteins, enzyme kinetics and metabolic pathways. 2-The module will also provide a background to fundamental aspects of chemistry. 3-This module provides you with the core knowledge and skills to enhance performance in the area of biological chemistry towards best benefit for forensic science in: ❖ Metabolism, Analytical Techniques in Biochemistry, ❖ Bioinorganic Chemistry ❖ Energy Metabolism
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Module-specific skills 1. Understand the biological, chemical and physical principles associated with forensic investigation. 2. Discuss the analytical techniques used in forensic science and their correct choice. 3. Demonstrate knowledge of the principal scientific techniques and skills required for the recognition, processing, recording, preservation, recovery, analysis and interpretation of evidence at and from a range of crime scenes. 4. Evaluate the limitations and principles of uncertainty in analysis and interpretation of forensic evidence. 5. Construct logical arguments and effectively communicate theories in different formats, including crime scene maps and a sequence of events. 6. Interpret written instruction to create time and spatial reconstructions of complex events with attention to detail. Personal and key skills

	7. Apply scientific principles to real life situations 8. Analyse and evaluate independently a range of research-informed literature and synthesise research-informed examples from the literature into written work 9. Illustrate and discuss the contested and provisional nature of knowledge and understanding 10. Analyse in detail essential facts and theory in a sub-discipline of the biosciences 11. Apply factual information to develop, with some guidance, a logical and reasoned argument with valid conclusions. 12. Effectively communicate justifications, evidence and conclusions using both graphical and written means in a manner appropriate to the intended audience. 13. Work in a small team and deal proficiently with the issues that teamwork requires (i.e. communication, motivation, decision-making, awareness, responsibility, and management skills, including setting and working to deadlines)
Indicative Contents المحتويات الإرشادية	• **Examination [10h]** **Written assessment typically includes exams and multiple choice tests.** • **Practical[10h]** **Practical is an assessment of your skills and competencies. This could include presentations, school experience, work experience or laboratory work. [10h]** • **Coursework [12h]** **Coursework typically includes essays, written assignments, dissertations, research projects or producing a portfolio of your work.[10h]** • **Final year research projects allow students to gain considerable research experience in one of the research laboratories. Working alongside world-leading researchers enriches the students experience and assists them in pursuing a career in biochemical research.[12h]**

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 discussion , for verities of information which could be applied to make real and ideal behaviour with forensic as science and as skills should be developed.while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	86	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	6.1
Unstructured SWL (h/sem) الحمل الدرا يس غ ري المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدرا يس غ ري المنتظم للطالب أسبوعيا	4.5
Total SWL (h/sem) الحمل الدرا يس الك يل 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
	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 Biochemistry
Week 2	Enzymes 1
Week 3	Enzymes 2
Week 4	Carbohydrates 1
Week 5	Carbohydrates 2
Week 6	Carbohydrates 3
Week 7	Carbohydrates Metabolism
Week 8	Exam
Week 9	Lipids
Week 10	Lipids Metabolism
Week 11	Cholesterol
Week 12	Amino Acids
Week 13	Proteins 1
Week 14	Proteins 2
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Chemistry Laboratory Safety Rules
Week 2	Lab 2: Spectrophotometry
Week 3	Lab 3: Determination of Ca Concentration in Serum
Week 4	Lab 4: Determination of P Concentration in Serum
Week 5	Lab 5: Determination of Total Iron Concentration in Serum
Week 6	Lab 6: Determination of Mg Concentration in Serum
Week 7	Lab 7: Exam
Week 8	Lab 8:Determination of Glucose Concentration in Serum

Week 9	Lab 9:Determination of Urea Concentration in Serum
Week 10	Lab 10:Determination of Creatinine Concentration in Serum
Week 11	Lab11:Determination of Uric Acid Concentration in Serum
Week 12	Lab 12:SGOT and SGPT
Week 13	Lab 13:Glucose Tolerance Test
Week 14	Exam
Week 15	Review All Previous Experiences

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	R. H. Garrett, C. M. Grisham, Biochemistry, Brooks / Cole Cengage Leatning, 2011	Yes
Recommended Texts	R. Brückner, Reaktionsmechanismen, Spektrum Verlag, 3rd Edition, 2004	No
Websites	https://biosciences.exeter.ac.uk/staff/module/?mod_code=BIO2068	

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.