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

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	BIOCHEMISTRY			**Module Delivery**	
Module Type	CORE			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☒**Practical** ☒**Seminar**	
Module Code					
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level	2		**Semester of Delivery**	2	
Administering Department	MPHY		**College**	College of Science	
Module Leader	Dr. Talib Hamid Mawat		**e-mail**	Dr.talib_h@nahrainuniv.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval	22/1/2026		**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	1. Define learning objectives for students. 2. Emphasize essential topics and skills. 3. Motivate students by clarifying relevance. 4. Provide benchmarks to measure success. 5. Foster critical thinking and practical skill development.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Knowledge: Understanding core concepts and principles (e.g., understanding cell structure or enzyme kinetics). 2. Skills: Developing practical, analytical, and problem-solving abilities (e.g., performing biochemical experiments or analyzing protein structures). 3. Application: Applying knowledge to real-world scenarios or further studies. 4. Behavioral Competencies: Building teamwork, communication, or critical thinking skills.
Indicative Contents المحتويات الإرشادية	• principles of biochemistry, albert L. Lehninger • Harper's Illustrated Biochemistry • Medical Biochemistry…Author: John W. Baynes, Marek H. Dominiczak • Lippincott's Illustrated Reviews: Biochemistry • Principles of Medical Biochemistry…Author: Daniel H Simmons, Gerhard Meisenberg
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1.Active Learning: Engage students with group work, case studies, and discussions. 2. Visual Learning: Use diagrams, animations, and concept maps to visualize processes. 3. Technology Integration: Incorporate modeling software, simulations, and online quizzes. 4. Problem-Based Learning (PBL): Present real-world problems to encourage critical thinking. 5. Inquiry-Based Learning: Encourage students to explore and ask questions. 6. Interdisciplinary Approach: Relate biochemistry to fields like molecular biology and pharmacology. 7. Fluency-Based Approach: Have students explain concepts in their own words. 8. Formative Assessment: Use frequent quizzes and assignments for feedback.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	65	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	135	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9

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**	4	10% (10)	2, 5, 10, 12	LO #1, 2, 10 and 11
	Assignments	6	10% (10)	Continuous	All
	Projects / Lab.	-	-	-	-
	Report	8	10% (10)	Continuous	All
	Seminar	1	10% (10)	Continuous	All
Summative assessment	**Midterm Exam**	2 hr	10% (10)	14	LO # 1-13
	Final Exam	5hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**The structure of cell**
Week 2	**Carbohydrate**
Week 3	**Amino acids and peptides**
Week 4	**Proteins**
Week 5	**Enzyme**
Week 6	**Lipid**
Week 7	**Nuclic acids**
Week 8	**Mid Exam**
Week 9	**Final Exam**

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Introduction to the Laboratory**
Week 2	**Safety Guidelines**
Week 3,4	**Detection of Carbohydrates**
Week 5,6	**Detection of Proteins**
Week 7,8	**Detection of Lipids**
Week 9,10	**Enzymes and Their Biological Role**
Week 11,12	**Nucleic Acids (DNA & RNA) Analysis**
Week 13	**Mid Exam**
Week 14	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	principles of biochemistry, albert L. Lehninger	YES
	Medical Biochemistry…Author: John W. Baynes, Marek H. Dominiczak	No
Recommended Texts	Harper's Illustrated Biochemistry	YES
Websites		

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