	Ministry of Higher Education and Scientific Research - Iraq Al-Nahrain University College of Science Applied Pathological Analysis Department	

MODULE DESCRIPTOR FORM نموذج

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Biochemistry II			**Module Delivery**	
Module Type	CORE			☑**Theory** ☑**Lecture** ☑**Tutorial** ☑**Seminar** ☐Practical ☐Lab	
Module Code	APPA 2212				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		2	**Semester of Delivery**		4
Administering Department		Applied Pathological Analysis	**College**	College of Science	
Module Leader	Dr. khawla A Kasar		**e-mail**	khawla.kasar@nahrainuniv.edu.iq	
Module Leader's Acad. Title		Assist. Prof	**Module Leader's Qualification**		Ph. D.
Module Tutor	Dr. Samar T. Hameed		**e-mail**	samar.thamer@nahrainuniv.edu.iq	
Peer Reviewer Name		Dr. Khawla A. Kasar	**e-mail**	khawla.kasar@nahrainuniv.edu.iq	
Scientific Committee Approval Date		2025-01-18	**Version Number**		1

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	Learning Strategies: Encourage students to take organized notes during lectures. Provide practice questions and problem-solving exercises. Participate actively in group discussions and collaborative activities. Make use of textbooks, online resources, and supplementary materials to reinforce learning. Provide constructive feedback on assignments and assessments. Feedback helps students understand their strengths and areas for improvement. **Teaching Strategies:** - Encourage students to actively engage with the material through discussions and group activities to promote deeper understanding. - Deliver well-structured lectures that provide a clear overview of the topic. - Incorporate videos, animations, and interactive simulations to illustrate complex biological processes. - Assign readings or video lectures as homework and use class time for discussions and activities.		

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module تقييمEvaluation المادة الدراسي ة					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	1	10% (10)	Continuous	LO #1, 2, 10 and 11
	Assignments	1	10% (10)	Continuous	LO #1, 3, 6,8, and 12
	Projects	1	10% (10)	Continuous	
	Report	1	10% (10)	Continuous	LO #1, 5 and 9
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	**Nucleic Acid and DNA** Structure - Composition - Functions of Nucleic Acids - DNA Replication - Transcription: Synthesis of RNA
Week 2	**Protein Synthesis** - Translation: Protein Biosynthesis
Week 3	**Introduction to metabolism** Introduction - Metabolic pathways - Metabolic intermediates - Homeostasis

Week 4	**Introduction to Metabolism** - Generation of energy - Degradation or catabolism of organic molecules - Synthesis of cellular building blocks and precursors of macromolecules
Week 5	**Introduction to Metabolism** - Storage of energy - Excretion of potentially harmful substances - Generation of regulatory substances - General principles common to metabolic pathways
Week 6	**Enzymes** - Properties of enzymes
	- The nature of enzymes - Cofactors or coenzymes Types of enzymes
Week 7	**Enzymes** - Factors affecting the enzyme activity Enzyme specificity
Week 8	**Enzymes** - Mechanism of enzyme catalysis - Reversible and irreversible reactions
Week 9	**Enzymes** - Enzyme kinetics
Week 10	**Mid exam**
Week 11	**Enzymes** - enzyme inhibition
Week 12	**Enzymes** - Regulation of enzyme activity
Week 13	**Enzymes** - Isoenzymes
Week 14	**Enzymes** - Disease states associated with abnormal enzyme functioning
	Preparation of final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	McKee, T., McKee, J. R. (2014). Biochemistry: The Molecular Basis of Life. United States: Oxford University Press. Rosenthal, M. D., Glew, R. H. (2011). Medical Biochemistry: Human Metabolism in Health and Disease. Germany: Wiley.	yes
Recommended Texts	Abali, E. E., Cline, S. D., Franklin, D. S., Viselli, S. M. (2021). Lippincott Illustrated Reviews: Biochemistry. (n.p.): Wolters Kluwer Health.	yes
Websites	https://www.enzyme-database.org/query.php?ec=7	

APPENDIX:

GRADING SCHEME مخطط الدرجا ت				
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