Ministry of Higher Education and Scientific Research - Iraq
Al-Mustaqbal University
College Of Sciences
Department of biology

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Biochemistry II			Module Delivery	
Module Type				☒ Theory ☒ Lecture ☒ Lab Tutorial Practical Seminar	
Module Code	UOMU0352403				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level			Semester of Delivery		
Administering Department		Type Dept. Code	College	Type College Code	
Module Leader			e-mail		
Module Leader's Acad. Title		Lecturer	Module Leader's Qualification		M.Sc.
Module Tutor			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		**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 biochemistry 2. Evolution to understand health foods. 3. The material covered includes basic biological concepts and fundamental principles of biochemstry 4. The role of biochemistry in our life. 5. Recognized the relationship between theoretical and practical. 6. Recognizing between biochemistry and other sciences . 7. learning blood disease. 8. Learning blood test and how to use apparatuses .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1. Give an introduction of biochemistry** 2. List various experiments that proofed blood and their diseases. 3. Summarize Traditional Approaches to the Study relationship between biochemistry with our life. 4. Explain and understanding the keywords in the subject 5. Discuss the disease that harmful for human 6. Define all terms in the lectures. 7. Illustrated the various diseases types
Indicative Contents المحتويات الإرشادية	In lecture lab 1-5 they will need (15hr). In lecture lab 7- 13 they will need (25 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 الدراس المنتظم للطالب خلال الفصل	**64**	**Structured SWL (h/w)** الحمل الدراس المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**61**	**Unstructured SWL (h/w)** الحمل الدارسي غير المنتظم للطالب أسبوعيا	**4**
Total SWL (h/sem) الحمل الدراس الكل للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15	4,7,9	1 and2, 3 and 5, 9
	Assignments	2	10	4 and 12	1 and 10
	Projects / Lab.	1	10	continuous	all
	Report	1	5	12	10
Summative assessment	Midterm Exam	2h	10	7	1-5, 7,8-12
	Final Exam	3h	50	16	all
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوع النضري	
Week	Material Covered
1	Water, electrolytes, acid base balance and buffers
2	Amino acids and peptides
3	Enzymes: catalysis, types, function and inhibition
4	Lipids: definition, chemical nature, function
5	Nucleic acids: nucleotides, DNA, RNA
6	Carbohydrates -1: monosaccharides, disaccharides,
7	Carbohydrates -2: polysaccharidesand glycoproteins
8	Glycolysis -1: reactions and energy produced Storage,
9	Glycolysis -2: mechanisms and control
10	Glycolysis-3: glycogen, gluconeogenesis, penose pathway
11	Citric acid cycle
12	Electron transport and oxidative phosphorylation
13	Metabolism of amino acids: synthesis and degradation, essential and nonessential amino acids
14	Purines and Pyrimidines: synthesis and degradation
15	Integration of metabolism
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوع للمختبر	
Week	Material Covered
1	pH: Operation of pH meter to measure the pH of Haemolymph and body fluids. Preparation of buffers: Phosphate buffer and citrate buffer.
2	Chromatographic techniques:a. Paper chromatographic techniques to separate amino acids.

3	Chromatographic techniques: b. Thin layer chromatographic technique to separate lipids.
4	Chromatographic techniques: c. Column chromatographic techniques to separate urinary pigments.
5	Chromatographic techniques: d. HPLC – Demonstration.
6	Colorimetric/Spectrophotometric estimation of the following biomolecules.
7	Total free amino acids (Ninhydrin reagent method)
8	Colorimetric/Spectrophotometric estimation of the following biomolecules. b. Protein (Biuret and Lowry *et al*., 1951 method)
9	Colorimetric/Spectrophotometric estimation of the following biomolecules. c. Total soluble carbohydrates (Anthrone reagent method)
10	Colorimetric/Spectrophotometric estimation of the following biomolecules. c. Total soluble carbohydrates (Anthrone reagent method)
11	Proteins : Properties , Structures , Synthesis types, reactions
12	Protein extraction from animal tissues and separation – 1
13	Protein extraction from animal tissues and separation – 2
14	Protein extraction from animal tissues and separation – 3
15	Protein extraction from plant tissues and separation – 4
1	pH: Operation of pH meter to measure the pH of Haemolymph and body fluids. Preparation of buffers: Phosphate buffer and citrate buffer.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	**Textbook of medical Biochemistry for medical student,6 edition,2012.** ❖	
Recommended Texts		
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.