



نموذج وصف الوحدة
نموذج وصف المادة الدراسي
كلية الهندسة / قسم الطب الحيوي



Module Information					
معلومات المادة الدراسية					
Module Title	biochemistry			Module Delivery	
Module Type	fundamental			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	BME-111				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level		UGx111	Semester of Delivery		One
Administering Department		BME.	College	ENG.	
Module Leader	MSc. Ghufan Basim Medeb		e-mail	ghufan.basim95@gmail.com	
Module Leader’s Acad. Title		Lecturer	Module Leader’s Qualification		MSc.
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name		Name	e-mail	E-mail	
Scientific Committee Approval Date		26/9/2025	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
Course objectives, learning outcomes and instructional contents

Module Aims أهداف المادة الدراسية	1. To know the types of food particles, distinguish their properties. 2. To understand the structure of chemical molecules 3. This course deals with the basic concept of proteins. 4. This is the basic theme of all organic and inorganic molecules of the body. 5. Develop skills to deal with concentration. 6. Know the types of tools used in diagnosis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn about proteins and amino acids. 2. Summarizing what carbohydrates are . 3. Learn about the function of enzymes . 4. discuss the most important enzymes that play a vital role in the mechanism, 5. Discuss the characteristics of prteins in each system 6. Explanation of circulatory lipids and tissues 7. describe the importance of adipose tissue and other organ 8. Discuss the most important dyes used in diagnosis 9. Description of immunohistochemistry technique 10. Electron microscopy and its importance in chemical diagnosis were discussed
Indicative Contents المحتويات الإرشادية	The instructional content includes the following. Fat metabolism of fats, fat structure, fat synthesis, alternative pathway, lipid degradation, fatty acids [12 hours]. Carbohydrates, glucose metabolism, glucose structure, glycolysis, inhibitory cycles, glycogen synthesis, glucose formation [12 hours]. Proteins , protein metabolism , protein synthesis , protein stimulation , anabolic proteins , protein fate , amino acids. [12 hours]. Hormones hormone synthesis, types of hormones, hormone function, hormone receptors, pituitary hormones. [20 hours].

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module encourage students' participation Dissection of rats and handling of dyes an laboratory slides, 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.
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	123	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	9
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	3, 6, 7
	Assignment	2	10% (10)	2, 12	3, 6, 7
	Projects / Lab.	1	10% (10)	Continuous	3, 6, 7
	Report	1	10% (10)	13	3, 6, 7
Summative assessment	Midterm Exam	2hr	10% (10)	7	3, 6, 7
	Final Exam	2hr	50% (50)	16	3, 6, 7
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المناهج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Chemistry Preparation of solutions, molar, molar, reagents, acids
Week 2	Alkaline, dielectric solution, concentration, titration
Week 3	Proteins , protein metabolism , protein synthesis , protein catalysis , protein synthesis , protein fate , amino acids
Week 4	Amino acid reaction, the relationship of amino acids with other molecules ,Protein synthesis , translation , transcription , globulin , albumin
Week 5	Liver function tests, bilirubin, GOT and AST , ALP , kidney function tests, urea, creatinine and uric acid
Week 6	Lipid metabolism, lipid synthesis, lipid synthesis, alternative pathway, lipid degradation, fatty acids
Week 7	Mid-term Exam
Week 8	Cholesterol, triglycerides, HDL , LDL , ketone bodies, bile salt, lipase
Week 9	Carbohydrates, glucose metabolism, glucose synthesis, glycolysis, inhibitory cycles, glycogen synthesis, glucose formation
Week 10	Diabetes, hyperglycemia, HbA1C , fasting glucose, fructose, sucrose, lactose
Week 11	Enzymes, Enzyme metabolism, Enzyme types, Enzyme function, Enzyme synthesis
Week 12	Liver enzymes, kidney enzyme, digestive enzyme, coenzyme, glycolysis enzymes
Week 13	Hormones Hormone Synthesis , Types of Hormones , Hormone Function , Hormone Receptors , Pituitary Hormones
Week 14	Thyroid hormones, Adrenal hormones, sex hormones, digestive hormones, pineal hormones
Week 15	DNA, RNA, guanine, thiamine, cytosine, adenine, uracil
Week 16	Preparatory week before the final exam

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Clinical Biochemistry, (8 editions), by Leipencotts	Yes
Recommended Texts		
Recommended 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.				



Head of the Department
Dr. Osama Abdulbari



أ.م.د. حسين هادي حسين
عميد كلية الهندسة



Ghufan Basim Medab