Module Description Form

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Biochemistry**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**NUR1102**				
ECTS Credits	**6**				
SWL (hr/sem)	**125**				
Module Level	1	**Semester of Delivery**		1	
Administering Department	Basic science	**College**	Nursing College		
Module Leader		**e-mail**			
Module Leader's Acad. Title	Asst.Prof.	**Module Leader's Qualification**		Ph.D.	
Module Tutor	Dr. Dalya Shakir Obida	**e-mail**	dalya.shakir.obaida@uonus.edu.iq		
Peer Reviewer Name	/	**e-mail**	/		
Scientific Committee Approval Date	٠٥/٠٥/2025	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The biochemical studies introduce students to the fundamental Concepts compounds of biochemistry. The students look at both structure and role of abnormal carbohydrate, Lipids, Fatty acids, Amino acids, protein, Enzymes with disease. They also acquire the basic skills necessary for medical laboratory analysis and operating, maintaining, and cleaning laboratory equipment.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successfully completing the course, the students will be able to:** 1. Define nutrients, properties, and classification. 2. Illustrate biochemical changes of nutrients and its metabolic pathway in human body. 3. Realize some important body constituents and their chemical changes in the laboratory. 4. Differentiate the biochemical functions of different human organs in normal and abnormal conditions. 5. Understand human biochemical reactions in normal situations and in case of diseases. 6. Use laboratory methods for monitoring biochemical reactions in biological samples. 7. Handle the laboratory equipment properly.

Indicative Contents المحتويات الإرشادية	Guide students to understand the importance of carbohydrates, proteins, and amino acids in human physiology. Highlight the significance and role of enzymes in regulating and controlling various physiological functions of the human body. Instruct students on the importance of monitoring carbohydrate (sugar) intake and high fat levels and conducting necessary tests for organ functions**.**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Lectures, discussions, Demonstrations and Lab. Work

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	٣,٣
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية

Assessment Type	Activity	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 4
	Assignments	2	10% (10)	2, 12	LO #3, 4, 5
	Projects / Lab.	1	10% (10)	Continuous	LO #6, 7
	Report	1	10% (10)	13	LO #3, 6, 7
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #1–5
	Final Exam	2hr	50% (50)	16	All LOs (#1–7)
Total assessment			100% (100 Marks)		

(Weekly Theory Syllabus) المنهج النظري الاسبوعي	
	Material Covered
Week 1	Chemistry of Carbohydrate Definition of carbohydrate.
Week 2	Classification, Mono, oligo and Polysaccharide. Chemical properties of Carbohydrate
Week 3	Metabolism of Carbohydrate. -Glycogensis -Glycogenolysis -Glycolysis
Week 4	Metabolic disorder of carbohydrate metabolism. -Diabetes mellitus.
Week 5	Chemistry of Lipids Definition Fats, oil, Waxes, Fatty acids. Classification. -Simple lipids -Compound lipids. -Derived lipids.
Week 6	Steroids -Sterols -Cholesterol. -Bile acids
Week 7	Lipids metabolism. Fats Oxidation. Metabolic disorder of lipids metabolism. Ketosis
Week 8	Chemistry of Amino acids and proteins Definitions of amino acid and protein. Classification of Amino acid
Week 9	Protein metabolism. Metabolic disorder of protein metabolism. Blood protein. Non protein.
Week 10	Chemistry of Enzymes Definition of Enzymes, Substrate. Hole Enzyme, Coenzyme unit of Enzyme and Zymogene. Inhibition of Enlyme
Week 11	Factors influence the activity of Enzyme. -Temperature -PH. -Concentration of Enzyme. -Concentration of Substrate
Week 12	Enzyme properties and Classification. -Plasma enzyme. -Lactate dehydrogenises Amylase
Week 13	Liver Function test Classification the liver Function test. Uses of Various testes collecting to evaluate the liver dysfunction.
Week 14	Renal function test Function of Kidney.

	Uses Various Functions tests that can be employed to assess the renal function
Week 15	Exam

المنهج الاسبوعي للمختبر (Weekly Syllabus for Lab.)	
	Material Covered
Week 1-2	Serum glucose
Week 3-4	Serum cholesterol
Week 5-6	Serum protein
Week 7-8	Serum Urea
Week 9-10	Serum Creatinine
Week 11-12	Serum uric acid
Week 13-14	Serum bilirubin
Week 15	Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**References:** • Lehninger Principles of Biochemistry – David L. Nelson & Michael M. Cox • Biochemistry – Jeremy M. Berg, John L. Tymoczko, Lubert Stryer	Yes
Recommended Texts		No
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 with 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.