Unit Description Form

Course Description Form

Faculty of Engineering / Department of

Unit Information

Course Information

Unit Title	**biochemistry**	**Unit delivery**	
Unit Type	**fundamental**	☒ نظريه ☒ حاضر ☒ المختبر ☐ تعليمي ☐ عملي ☐ Seminar	
Unit Code	BME-11-07		
ECTS Credits	**8**		
SWL (ساعة / SEM)	**200**		

Unit level	4	**Delivery Semester**	1
Department of Administration	Biomedical Engineering	**College**	Faculty of Engineering
Unit Commander	Mariam Abdullah Saeb	**E-mail Address**	Mayram.ab@uowa.edu.iq
Title of Unit Commander	Assistant Lecturer	**Unit Commander Qualifications**	Master
Unit Teacher		**E-mail Address**	
Peer Reviewer Name	name	**E-mail Address**	E-mail Address
Date of accreditation of the Scientific Committee	26/9/2024	**Version number**	1.0

Relationship with other units

Relationship with other subjects

Prerequisites Unit	No	**Semester**	
Common Requirements Unit	No	**Semester**	

Unit objectives, learning outcomes and how-to contents Course objectives, learning outcomes and instructional contents	
Objectives of the Unit Course Objectives	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.
Unit Learning Outcomes Learning outcomes of the course	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 Indicative Contents	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]hour].

Learning and Teaching Strategies Learning and Teaching Strategies	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students to prepare for thawing, measuring concentration and laboratory technique, this will be achieved through interactive classrooms and tutorials and by considering the type of simple experiments that include some sampling activities of interest to students.

Student Workload (SWL) The student's academic load is calculated for 15 weeks			
SWL منظم (h / sem) Regular academic load of the student during the semester	123	**SWL regulator(h/s)** Regular student load per week	9
SWL غير منظم (h / sem) Irregular academic load of the student during the semester	77	**Unregulated SWL (h/s)** Irregular student academic load per week	6
SWL إجمالى (h / sem) The student's total academic load during the semester	200		

Unit Evaluation Course Evaluation					
As		**Time/Number**	**Weight (tags)**	**Week due**	**Related learning outcomes**
Formative Assessment	**Contests**	2	10% (10)	5, 10	LO #1 , 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO #3 , 4, 6 and 7
	Projects /Laboratory.	1	10% (10)	continuous	every
	report	1	10% (10)	13	LO #5 , 8 and 10
Final Assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #1-7
	Final Exam	2 hours	50% (50)	16	every
	Overall Rating		100% (100 degree)		

Delivery Plan (Weekly Curriculum) Theoretical Weekly Curriculum	
week	**Covered Material**
Week 1	Introduction to Chemistry Preparation of solutions, molars, molars, 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	Midterm 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, pinal hormones
Week 15	DNA, RNA, guanine, thiamine, cytosine, adenine, uracil
Week 16	Preparatory week before the final exam

Learning and Teaching Resources

Learning and Teaching Resources

	text	Available in the library?
Required texts	Clinical Biochemistry, (8 editions), by Leipencotts	Yes
Recommended texts		Yes
Websites		

Grading chart

Grading chart

group	degree	Appreciation	Tags (%)	definition
An-Najah Group (50 - 100)	**A -** Excellent	privilege	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Proper work with noticeable errors
	D - Satisfactory	medium	60 - 69	Fair but with significant shortcomings
	E - sufficient	Acceptable	50 - 59	The work meets the minimum standards
Group failure (0 – 49)	**FX -** Failed	Deposit (in (processing	(45-49)	More work required but credit granted
	F - Failed	Failure	(0-44)	Large amount of work required

Note: Signs that are more than 0.5 decimal places greater than or below the full mark will be rounded higher or lower (for example, a score of 54.5 will be rounded to 55, while a mark of 54.4 will be rounded to 54. The university has a policy of not tolerating "imminent traffic failure", so the only modification to the marks granted by the original mark(s) will be the automatic rounding described above.