1.Course Name:
Biochemistry
2.Course Code:
WNR-2-11
3.Semester / Year:
First Stage/First Semester
4.Description Preparation Date:
1/10/2024
5.Available Attendance Forms:
In-person lectures and practical laboratories (attendance forms)
6.Number of Credit Hours (Total) / Number of Units (Total)
3 Theoretical + 2 Lab (5 Hours Per Week), Number of Credits (4)
7.Course administrator's name (mention all, if more than one name)
Name: Zahraa A. Althabet Email: zahraa.abdali@uowa.edu.iq
8.Course Objectives
• **Define** nutrients, properties, and classification. • I**llustrate** biochemical changes of nutrients and its metabolic pathway in the human body. • **Differentiate** the biochemical functions of different human organs in normal and abnormal conditions. • **Understand** the human biochemical reactions in normal situations and in cases of diseases. • **Use** laboratory methods for monitoring biochemical reactions in biological samples. • **Handle** the laboratory equipment properly. • **Realize** some important body constituents and their chemical changes in the laboratory. • **Demonstrate** responsibility in handling biological samples and lab equipment. • **Appreciate** the importance of biochemical balance in maintaining health. • **Commit** to ethical standards in biomedical analysis and diagnosis.

1. Teaching and Learning Strategies	
Strategy	- Theoretical lectures. - Discussions. - Reports. - Lab training

2. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3T+2L	Learn the basic concepts of carbohydrate chemistry (definiti and classification of carbohydra and chemical properties of carbohydrates)	Chemistry of Carbohydra (Definition of carbohydra Classification, Chemical properties of Carbohydra	-Lectures. - seminars. - Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
2	3T+2L	Learn the basic concepts of carbohydrate metabolism, glycolysis, Krebs cycle, Glycogenesis ,glycogenolysis	Metabolism of Carbohydrate. -Glycolysis -Krebs Cycle -Glycogenesis -Glycogenolysis	- Lectures. - seminars. -Lab training.	Quizzes, students' participation in the lecture, &Practical evaluation .
3	3T+2L	learn the basic concepts of carbohydrate metabolism disorder (diabetes)	Metabolic disorder of carbohydrate metabolism. -Diabetes mellitus	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
4	3T+2L	learn the basic concepts 3T + 2 of fats and fatty acids, their classification and chemical properties	Chemistry of lipids Definition Fats, oil, Wax Fatty acids, Classification, Son important chemical properties	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
5	**Mid-term exam. No 1**				
6	3T+2L	Learn the basic concepts of fat	Lipids metabolism, Fats Oxidation	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
7	3T+2L	Understand the basic concepts metabolic disorders in fat metabolism, including Ketosis	Metabolic disorder of lipids metabolism, Keto	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .

8	3T+2L	Understand the basic concepts of amino acids and proteins, their classification and chemical properties.	Chemistry of Amino Aci and Proteins, Classification, Propertie	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
9	3T+2L	Understand the basic concepts of protein metabolism and metabolic disorders	Protein Metabolism, Metabolic Disorders	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
10	Mid-term exam. No 2				
11	3T+2L	Understand the basic concepts of blood protein and nitrogen products (urea, creatinine, uric acid).	Blood Proteins, Urea, Creatinine, Uric Acid Formation	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
12	3T+2L	Understand the basic concepts of enzymes and coenzymes.	Enzyme Definitions, Coenzymes, Zymogen	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
13	3T+2L	Understand the basic concepts of liver function tests and their classification.	Liver Function Tests, Classification, Dysfuncti Assessment	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .
14	3T+2L	Learn the basic concepts of kidney function tests and dysfunction assessment.	Renal Function Tests, Kidney Functions, Assessment Methods	-Lectures. - seminars. -Lab training	Quizzes, students' participation in the lecture, &Practical evaluation .

3. Course Evaluation

Evaluation				Score standard
Formative		**Summative**		-Excellent (90-100) -Very Good (80-less than 90) -Good (70-less than 80) -Fair (60-less than 70) -Acceptable (50-less than 60) - Fail (less than 50)
Scores	**Evaluation methods**	**Scores**	**Evaluation methods**	
4%	Daily Quizzes	10%	First-Mid-term theoretical exam	
2%	Seminars	10%	Second-midterm exam	
2%	Reports	15%	Mid-term-practical evaluation	
2%	Participation	20%	Final practical exam	
		40%	Final theoretical exam	
5%		95%		

4. Learning and Teaching Resources

Required textbooks (curricular boo if any)	-Biochemistry (Lippincott's Illustrated Reviews Series), 6E -2017 - Basic Medical Biochemistry - A Clinical Approach

	- Biochemistry__Satyanarayana_Chakrapani
Main references (sources)	
Recommended books and references (scientific journals, reports...)	-Nutrition and Biochemistry for Nurses (2018) (Anthikad) [PDF]
Electronic References, Websites	- https://pubmed.ncbi.nlm.nih.gov/ - https://www.ncbi.nlm.nih.gov/ Lecturer : Zahraa A.althabet