



**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**

**University of Warith Al-Anbiyaa
College of Medicine**

Biomedical chemistry


مصادقة السيد العميد
الطبيب الاخصائي
أ.د. علي محمد سعادون الغزالي



2024

Course Description Form

1. Course Name:	
Biomedical chemistry	
2. Course Code:	
Med101	
3. Semester / Year:	
2024	
4. Description Preparation Date:	
2024/4/30	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Units 9 Theoretical 90 hours Practical 60 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Riyadh Abdel Rasoul Hamid Haniwa Email: riadh.ab@uowa.edu.iq	
8. Course Objectives	
Course Objectives	Introducing the student to studying the chemical composition of the human body and the changes that occur in this composition in normal and pathological cases, and conducting some laboratory experiments on some of the body's natural compounds.
9. Teaching and Learning Strategies	
Strategy	These are the plans that faculty members used to develop the teaching and learning process for students, and they are the plans that are followed to reach learning goals. They describe all curricular and extracurricular activities to achieve the learning outcomes of the programme.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
6	36	<p>State amino acid properties, Select amino acids which produce specific biological compounds, Explain the biomedical importance of amino acid decarboxylation, Define transamination. State the clinical value of transamination, List the reactions due to carboxyl group reactions due to amino group and reactions of SH group, Match the clinical applications to the type of amino acid. Account for some of the typical properties of amino acids (e.g., high melting point, solubility in water) in terms of zwitterion formation.</p> <p>Illustrate disulfide bond formation, Explain the importance of disulfide bond, Define peptide bond, dipeptide, tripeptide and polypeptide, express how they are formed. Draw and name, the possible isomers of tripeptides that can be formed by combining three different amino acid residues (amino acids).</p>		<p>Learning method a lecture laboratory Discussion groups small(sgd)</p>	<p>Conducting daily and monthly exams and evaluating daily interaction during lecture, laboratory, and small groups</p>

		<p>acid units) of given structure, Illustrate the formation of a disulfide linkage between two cysteine residues, and how such bonds can link together two separate peptide chains or can provide a bridge between two cysteine residues present in a single peptide molecule. State the different structural organizations of proteins, Describe the basic structure of a protein, including both simple and conjugated proteins, Give examples on the protein structure-function relationship, Describe the main physical properties of proteins. State the different structural organizations of proteins, Describe the basic structure of a protein, including both simple and conjugated proteins, Give examples on the protein structure-function relationship, Describe the main physical properties of proteins. Classify proteins, select suitable examples from each group, Describe the basic structure of simple and conjugated proteins. Differentiate fibrous proteins and globular</p>			
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	<p>proteins; Give example of the primary structure of a protein. Discuss the function and clinical significance of proteins, Revisiting general causes of abnormal serum protein concentration, and Explain the non-pathological factors that influence serum protein concentration.</p> <p>Digestion of proteins, absorption of amino acids, Gastric and intestinal peptidases, pancreatic peptidases, Amino acid transport across intestinal cells, Nitrogen balance, positive and negative nitrogen balance, causes, Degradation and transport, intracellular and tissue protein, Amino acid Metabolism, Essential and non-essential amino acids, Amino acid biosynthesis, Transamination reactions, role of pyridoxal-5-phosphate, Amino acid catabolism, Ketogenic and glucogenic amino acids, Transport of ammonia to the liver and kidney, neurotoxicity associated with ammonia. Ur</p>			
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		<p>cycle, transport of urea and excretion regulation, Metabolic fate of some amino acids and TCA cycle.</p> <p>Tyrosine - derived neurotransmitters. Tryptophan-derived neurotransmitters. Creatine, Glutathione, polyamines, biosynthesis functions, Nitric oxide biosynthesis and functions.</p> <p>Biosynthesis of purine nucleotides, de novo and salvage pathways. Regulation of purine biosynthesis and degradation of purines. Biosynthesis of pyrimidine nucleotides, regulation, orotic aciduria. Degradation of pyrimidine nucleotides. Deoxyribonucleotide biosynthesis.</p>			
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11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Textbook of biochemistry medical students
Main references (sources)	DM Vasudevan
Recommended books and references (scientific journals, reports...)	Quick review of biochemistry Martin A Crook Lecture notes of biochemistry
Electronic References, Websites	