**Course Description Form**

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| 1. Course Name: | | | | | | | | |
| Biochemistry 1 | | | | | | | | |
| 1. Course Code: | | | | | | | | |
| **304CHBC1** | | | | | | | | |
| 1. Semester / Year: | | | | | | | | |
| **First semester /Third year** | | | | | | | | |
| 1. Description Preparation Date: | | | | | | | | |
| 1/10/2024 | | | | | | | | |
| 1. Available Attendance Forms: | | | | | | | | |
| mandatory | | | | | | | | |
| 1. Number of Credit Hours (120) / Number of Units (2) | | | | | | | | |
| **30h – 3 units** | | | | | | | | |
| 1. Course administrator's name (mention all, if more than one name) | | | | | | | | |
| Name: Ekhlas Abdallah Hassan  Email: [ekhlasbiochemistry@gmail.com](mailto:ekhlasbiochemistry@gmail.com)  [ekhlasabdullah@uodiyala.edu.iq](mailto:ekhlasabdullah@uodiyala.edu.iq) | | | | | | | | |
| 1. Course Objectives | | | | | | | | |
| **Course Objectives** | **1- Giving the student broad information about biochemistry**  **2- How the student knows how to understanding the chemistry of macromolecules**  **3- Giving the student sufficient information bout macromolecules and knowing the**  **chemical sources related to them,** | | | | | | | |
| 1. Teaching and Learning Strategies | | | | | | | | |
| **Strategy** | | | **Engage, Explore, Explain, Elaborate, and Evaluate** | | | | | |
| 1. Course Structure | | | | | | | | |
| **Week** | | **Hours** | | **Required Learning Outcomes** | **Unit or subject name** | | **Learning method** | **Evaluation method** |
| 1 | | **2** | | CARBOHYDRATE CHEMISTRY | • Definition, •Classification and Functions of Carbohydrates n  • Structure of Glucose | | blackboard + PowerPoint | Daily exams and homework + monthly exams |
| 2 | | **2** | | CARBOHYDRATE CHEMISTRY | • Isomerism  • Mutarotation  • Chemical •Properties of Monosaccharides •Glycoside Formation | | blackboard + PowerPoint | Daily exams and homework + monthly exams |
| 3 | | **2** | | CARBOHYDRATE CHEMISTRY | Derivatives of Monosaccharides  • Disaccharides  • Polysaccharides (Glycans)  • Glycoproteins | | blackboard + PowerPoint | Daily exams and homework + monthly exams |
| 4 | | **2** | | CHEMISTRY OF LIPIDS | -Definition, Classification and Functions of Lipids  • Fatty Acids  • Essential Fatty Acids | | = | = |
| 5 | | **2** | | CHEMISTRY OF LIPIDS | • Reactions of Lipids Characterization of Fat  • Triacylglycerols or Triacylglycerides or Neutral Fat | | = | = |
| 6 | | **2** | | CHEMISTRY OF LIPIDS | Phospholipids  • Glycolipids  Cholesterol Lipoproteins | | = | = |
| 7 | | **2** | | CHEMISTRY OF LIPIDS | Eicosanoids  • Micelles, Lipid Bilayer and Liposomes Detergents | | = | = |
| 8 | | **2** | | CHEMISTRY OF PROTEINS | • General Nature of Amino Acids Classification of Amino Acids | | = | = |
| 9 | | **2** | | CHEMISTRY OF PROTEINS | • Modified or Nonstandard Amino Acids  Properties of Amino Acids | | = | = |
| 10 | | **2** | | CHEMISTRY OF PROTEINS | • Biologically Important Peptides • Definition, Classification and Functions of Proteins  • Structure of Proteins  • Properties of Proteins • Denaturation of Proteins | | = | = |
| 11 | | **2** | | ENZYMES | • Definition • Zymogen or Proenzyme  • Cofactors (Coenzyme and Activator) • How Enzymes Work  • Mechanism of Enzyme Action | | = | = |
| 12 | | **2** | | ENZYMES | Enzyme Classification  • Specificity of Enzyme Action • Factors | | = | = |
| 13 | | **2** | | ENZYMES | Affecting the Velocity of Enzyme Reaction  • Enzyme Kinetics  • Enzyme Inhibition | | = | = |
| 14 | | **2** | | ENZYMES | Allosteric Enzyme  • Isoenzyme • Clinical Significance of Enzymes | | = | = |
| 15 | | **2** | | CHEMISTRY OF NUCLEIC ACIDS | Nucleic Acids • Nucleotide  • Biologically Important | | = | = |
| 1. 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 | | | | | | | | |
| 1. Learning and Teaching Resources | | | | | | | | |
| 1. Books Required reading: | | | | | | ESSENTIALS OF BIOCHEMISTRY. Pankaja Naik PhD  Professor and Head  Department of Biochemistry  MVPS Dr Vasantrao Pawar Medical College  Nashik, Maharashtra  India | | |
| 2. Main references (sources) | | | | | | Harper's Illustrated Biochemistry, 31e | | |
| A- Recommended books and references (scientific journals, reports…). | | | | | |  | | |
| B-Electronic references, Internet sites… | | | | | | Textbook of Biochemistry - For Medical Students, 6th Edition | | |