

Course Description Form

1. Course Name:					
Biochemistry					
2. Course Code: ZUDE0205					
3. Semester / Year: 2025-2026					
Annual					
4. Description Preparation Date:					
30-7-2025					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours (Theoretical) + 60 hours (Practical). (Two theoretical hours and two practical hours week)					
7. Course administrator's name (mention all, if more than one name)					
Name: Zaid Noor Obeid Mohammad					
Email: zaid.noor@alzahu.edu.iq					
8. Course Objectives					
Course Objectives	- Enabling students to acquire knowledge of how to use and deal with biochemistry, in addition to introducing students to vital compounds that have importance in the human body. - Enabling students how to detect some of the vital compounds in the human body. Training students on how to collect blood sample and determine biomarker concentration, and conduct various chemical tests.				
9. Teaching and Learning Strategies					
Strategy	1- Use PowerPoint lectures. 2- Method of debate and discussion. 3- Using smart screens and whiteboards to display scientific material. 4- Education in laboratories to acquire scientific skills. 5- Reports and projects. 6- Student groups and Workshops. 7- Scientific trips. Oral discussions.				
10. Course structure					
Week	Hours	Subject name	Required learning outputs	Learning method	Assessment method
1	2	Enzymes: Definition, Terminology, and Classification		Power Point	Quiz

2	2	Mechanism of enzyme action		Power Point	Quiz
3	2	Clinical significance of enzyme assays		Power Point	Quiz
4	2	Vitamins, definition, classification		Power Point	Quiz
5	2	Digestion and absorption of carbohydrates, lipids ,and proteins		Power Point	Quiz
6	2	Chemistry of carbohydrates		Power Point	Quiz
7	2	Metabolism of Carbohydrates: part 1		Power Point	Quiz
8	2	Metabolism of Carbohydrates: part 2		Power Point	Quiz
9	2	Carbohydrates metabolism regulation		Power Point	Quiz
10	2	Chemistry of Proteins and amino acids		Power Point	Quiz
11	2	Metabolism of Proteins and amino acids		Power Point	Quiz
12	2	Metabolism of Protein and amino acid regulation		Power Point	Quiz
13	2	Metabolism of Protein and amino acid inherited disorder		Power Point	Quiz
14	2	Exam		Power Point	Quiz
15	2	Lipid :definition, classification		Power Point	Quiz
16	2	Metabolism of Lipid: oxidation of Fatty Acids		Power Point	Quiz
17	2	Biosynthesis of Fatty Acids		Power Point	Quiz
18	2	Integration of metabolism of carbohydrates, lipid ,and Proteins		Power Point	Quiz
19	2	Metabolism of Purines and pyrimidines		Power Point	Quiz
20	2	Metabolism of Purines and pyrimidines disorder		Power Point	Quiz
21	2	Nucleic Acids Definition and Protein synthesis		Power Point	Quiz
22	2	Hormone definition, classification		Power Point	Quiz
23	2	Hormone disorder		Power Point	Quiz
24	2	Acid-base balance		Power Point	Quiz
25	2	Trace elements disorder		Power Point	Quiz
26	2	Salivary secretion(saliva), Pancreatic juice		Power Point	Quiz

27	2	Electrolytes		Power Point	Quiz
28	2	Liver Function Test		Power Point	Quiz
29	2	Kidney Function Test		Power Point	Quiz
30	2	Exam		Power Point	Quiz

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

- Midyear written exam: 15 marks
- Annual pursuit: 25 marks
- Final clinical exam: 20 marks

Final written exam; 40 marks

12. Learning and Teaching Resources

Main references (sources)	Lippincott Leninger
Recommended books and references (scientific journals, reports...)	Recent researches from the internet Marten crock

10.Course structure / Practical

Week	Hours	Subject name	Required learning outputs	Learning method	Assessment method
1	2	Lab.Safety		Power Point	Quiz
2	2	Sample collection-1		Power Point	Quiz
3	2	Sample collection-2		Power Point	Quiz
4	2	Spectrophotometer		Power Point	Quiz
5	2	Blood glucose & HbA1c		Power Point	Quiz
6	2	Total protein		Power Point	Quiz
7	2	Albumin + globulin		Power Point	Quiz
8	2	Troponin		Power Point	Quiz
9	2	Liver function test (bilirubin)		Power Point	Quiz
10	2	Alkaline phosphatase		Power Point	Quiz
11	2	Transaminase (ALT&AST)		Power Point	Quiz
12	2	Lipid in blood		Power Point	Quiz

		(cholesterol & lipoprotein)			
13	2	Triglyceride		Power Point	Quiz
14	2	Kidney function test(urea)		Power Point	Quiz
15	2	Exam		Power Point	Quiz
Second semester					
16	2	S.creatinine and creatinine clearance		Power Point	Quiz
17	2	General urine analysis -1		Power Point	Quiz
18	2	General urine analysis -2		Power Point	Quiz
19	2	Uric acid		Power Point	Quiz
20	2	Amylase in serum and saliva		Power Point	Quiz
21	2	Creatine phosphokinase		Power Point	Quiz
22	2	Lactate dehydrogenase		Power Point	Quiz
23	2	Serum calcium		Power Point	Quiz
24	2	Serum phosphorus		Power Point	Quiz
25	2	Serum Na		Power Point	Quiz
26	2	Serum K		Power Point	Quiz
27	2	Serum Iron		Power Point	Quiz
28	2	Vitamin D		Power Point	Quiz
29	2	Vitamin C		Power Point	Quiz
30	2	Exam		Power Point	Quiz

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12. Learning and Teaching Resources

Main references (sources)	Crook, M. (2013). Clinical biochemistry and metabolic medicine. CRC press Marshall, W. J., Lapsley, M., Day, A., & Shipman, K. (2020). Clinical chemistry. Elsevier Health Sciences
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Recommended books and references (scientific journals, reports...)	http://www.ncbi.nlm.nih.gov/books/bv