



Course Description for Biochemistry-2nd Semester (Theoretical)

Performance review of higher education institution (assessment of the academic program)

This course description summarizes the key characteristics and anticipated learning objectives for students, assessing their utilization of available learning resources, and must be aligned with the program description.

1. Educational Institution	Ministry of Higher Education and Scientific Research /Al-Zahrawi University
2. College	Pharmacy
3. Course Name / Code	Biochemistry theory \ PCLS 38
4. Programs in which it is included	Bachelor of Pharmacy
5. Available Forms of Attendance	Daily Attendance
6. Semester / Year	Second semester /Third-year
7. Total Number of Study Hours	45 Hours
8. Date of preparing this description	2025-2026
9. Course Objectives:	Understanding the basics of biochemistry and studying the compounds involved in the formation of organic molecules (carbohydrates, fats, proteins) and their metabolic stages within the body.
10. Learning Outcomes, Teaching and Learning Methods, and Evaluation	

A. Knowledge and Understanding

- 1- Study of the basic chemical compounds (carbohydrates, proteins, fats).
- 2- Study of the metabolic stages and processes that occur in the body during periods of fasting and feeding.
- 3- Study of chemical reactions involving various metabolic pathways, such as the citric acid cycle.

B. Subject-Specific Skills

- ☐ 1-Teaching skills in biochemistry.
- ☐ 2-The student should have the ability to describe and illustrate models.
- ☐ 3-The student should have the ability to link causes with natural effects..

Teaching and Learning Methods

1. Discussion and dialogue method.
2. Troubleshooting and treatment.
3. Seminars.

C. Evaluation Methods

1. Oral discussions in the classroom and written exams.
2. Midterm exams and end-of-semester exams.
3. Daily assignment reports.

D. Thinking Skills

- D1. Encourage students to find problems related to the subject of study
- D2. Encourage students to find solutions to those problems
- D3. Conduct experiments individually and collectively.
- D4. Compare results and troubleshoot

E. General and Transferable Skills

- D1. The student should be able to think logically to solve problems
- D 2. The student should acquire manual work skills.
- D 3. The student should be able to develop and innovate skills

Weeks	Hours	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluation Method
1	3	Knowledge	Glycolysis	Blackboard and Screen Presentations	Daily exam and oral questions
2	3	Knowledge	Cribs cycle	Blackboard and Screen Presentations	Daily exam and oral questions
3	3	Knowledge	gluconeogenesis	Blackboard and Screen Presentations	Daily exam and oral questions
4	3	Knowledge	Glycogen metabolism	Blackboard and Screen Presentations	Daily exam and oral questions
5	3	Knowledge	Pentose phosphate pathway	Blackboard and Screen Presentations	Daily exam and oral questions
6	3	Knowledge	Synthesis of fatty acid	Blackboard and Screen Presentations	Daily exam and oral questions
7	3	Knowledge	Fatty acid oxidation	Blackboard and Screen Presentations	Daily exam and oral questions
8	3	Knowledge	Unessential amino acids synthesis	Blackboard and Screen Presentations	Daily exam and oral questions
9	3	Knowledge	Protein catabolism and amino acid nitrogen	Blackboard and Screen Presentations	Daily exam and oral questions
10	3	Knowledge	Respiratory chain and oxidative phosphorylate	Blackboard and Screen Presentations	Daily exam and oral questions
11		Knowledge	Conversion of amino acids to specific compounds		
12	3	Knowledge	Urea cycle	Blackboard and Screen Presentations	Daily exam and oral questions
13	3	Knowledge	Amino acid diseases	Blackboard and Screen Presentations	Daily exam and oral questions
14	3	Knowledge	Porphyrins metabolism	Blackboard and Screen Presentations	Daily exam and oral questions
15	3	Knowledge	Cholesterol synthesis	Blackboard and Screen Presentations	Daily exam and oral questions

12Infrastructure	
Required Readings:	References: <i>Harpers illustrated biochemistry , 26 edition</i>
Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites:

13.Admission:	
Prerequisites	Admission according to the central plan
Minimum Number of Students	/
Maximum Number of Students	Admission exceeds the capacity plan

Name of the Instructor: Dr. Balsam Ghazi Alkassar

