



Jordan University of Science and Technology
Faculty of Science & Arts
Applied Biological Sciences Department

BIO741 Advanced Biochemistry

Second Semester 2024-2025

Course Catalog

3 Credit Hours. This course is designed to provide a thorough (Advanced) introduction in Biochemistry. The class materials will provide deep coverage to molecules and biochemical processes found in living systems. Enzymes mechanisms and kinetics, Metabolism of sugars, Metabolism of proteins, Metabolism of lipids, Metabolism of nucleic acids and the integration of metabolism will be discussed and comprehensively covered.

Teaching Method: On Campus

Text Book

Title	Biochemistry
Author(s)	Berg, Gatto, Jr., Hines, Heller, Tymoczko and Stryer
Edition	10th Edition
Short Name	Text Book
Other Information	@ 2023 by Macmillan Learning. New York. USA.

Instructor

Name	Prof. Nisreen Al-Quraan
Office Location	PH1-L0
Office Hours	Sun : 11:00 - 12:00 Mon : 11:00 - 13:00 Tue : 13:00 - 14:00 Thu : 11:00 - 12:00 Thu : 13:00 - 14:00
Email	naquraan@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Mon : 13:30 - 16:30

Room: NF39

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Enzymes: Core Concepts and Kinetics	Chapter 5 From Text Book
Week 2	Enzymes Catalytic Strategies	Chapter 6 From Text Book
Week 3	Enzymes Regulatory Strategies	Chapter 7 From Text Book
Week 4	Metabolism: Basic Concepts and Themes	Chapter 15 From Text Book
Week 5	Glycolysis and Gluconeogenesis	Chapter 16 From Text Book
Week 6	Pyruvate Dehydrogenase and The Citric Acid Cycle	Chapter 17 From Text Book
Week 7	Oxidative Phosphorylation	Chapter 18 From Text Book
Week 8	Phototrophy and the Light Reaction of Photosynthesis	Chapter 19 From Text Book
Week 9	Calvin-Benson Cycle and Pentose Phosphate Pathway	Chapter 20 From Text Book
Week 10	Glycogen Metabolism	Chapter 21 From Text Book
Week 11	Fatty Acid and Triacylglycerol Metabolism	Chapter 22 From Text Book
Week 12	Protein Turnover and Amino Acids Catabolism	Chapter 23 From Text Book
Week 13	Nucleotide Biosynthesis	Chapter 26 From Text Book
Week 14	Biosynthesis of Membrane Lipid and Steroids	Chapter 27 From Text Book
Week 15	The Integration of Energy Metabolism	Chapter 24 From Text Book

Policy

Office Hours	Official office hours will be posted on JUST electronic system and Elearning. Please contact me by email to make an appointment if needed. You are also welcome to just stop by my Office or lab, but I may not be available unless you have an appointment.
Attendance	Students are expected to attend all classes. Consequently, students are responsible for ALL materials posted on Elearning system, presented or assigned during the scheduled class period and are expected to obtain such information on their own should a class period be missed. Whenever possible, absences will be discussed with the instructor in advance. Class attendance will be taken in lecture. Students will be allowed three absences between every mid-term exam, and a total of six absences before the final. Absences in excess of that stated above will result in the student failing in the course.
Academic dishonesty and Make-up examinations	JUST regulations and rules will be strictly implemented. Refer to University's student information book for more details about exams, exam make up and absence rules; If you are absent from one or more of your examinations for medical or other reasons, you must provide documentary evidence to justify your absence for the consideration of a makeup exam within one week or else no makeup exam will be permitted.

Evaluation	Exam I 25% Exam II 25% Exam III 25% Exam IV 25% ----- Total 100%
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Date Printed: 2025-03-15