Jordan University of Science and Technology

Faculty of Science & Arts

Biotechnology & Genetic Engineering Department

BT230 Basic Biotechnology - JNQF Level: 7

First Semester 2024-2025

Course Catalog
3 Credit Hours. This course offers a comprehensive introduction to the field of biotechnology, encompassing its fundamental concepts and methodologies. It provides an in-depth exploration of molecular and genetic principles, emphasizing the techniques and approaches employed in the manipulation of living organisms and their products. The curriculum delves into various applications of biotechnology across multiple domains, including microbial, agricultural, animal, forensic, medical, environmental and industrial sectors. Through this course, students will gain a robust understanding of biotechnological processes and their transformative impact in diverse scientific arenas.
Teaching Method: Blended

Text Book	
Title	Introduction to Biotechnology
Author(s)	William J. Thieman and Michael A. Palladino
Edition	4th Edition
Short Name	Textbook
Other Information	2020. Pearson Education Limited, UK.

Instructor	
Name	**Prof. Nisreen Al-Quraan**
Office Location	PH1-L0
Office Hours	
Email	naquraan@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 09:30 - 10:30
Room: SB13

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
821071	HSS107BT General Biology Laboratory	Prerequisite / Pass
961070	BT107 General Biology Laboratory	Prerequisite / Pass
961020	BT102 General Biology (2)	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	The Biotechnology Century and its workforce- Chapter 1	From **Textbook**
Weeks 2, 3, 4	Recombinant DNA technology- Chapter 3	From **Textbook**
Week 5	Proteins as a product - Chapter 4	From **Textbook**
Week 6	Microbial Biotechnology- Chapter 5	From **Textbook**
Week 7	Plant Biotechnology - Chapter 6	From **Textbook**
Week 8	Animal Biotechnology- Chapter 7	From **Textbook**
Week 9	DNA Fingerprinting and Forensic Analysis- Chapter 8	From **Textbook**
Week 10	Bioremediation - Chapter 9	From **Textbook**
Week 11	Aquatic Biotechnology - Chapter 10	From **Textbook**
Week 12	Medical Biotechnology - Chapter 11	From **Textbook**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Describe biotechnology as an industry and business [1SLO1] [1L7K1]	5%	Midterm Exam
Describe fundamental concepts and principles in biotechnology, including genetic engineering, molecular cloning, and recombinant DNA technology [1SLO1] [1L7K1]	40%	Midterm Exam, Quizzes
Analyze genetic data and interpret results from experiments involving DNA manipulation, PCR, and gel electrophoresis [1SLO4] [1L7S1]	15%	Quizzes

Apply various biotechnological processes in areas such as agriculture, medicine, and environmental management, animal, forensic, food, and industry [1SLO3] [1L7S2]	40%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
45		40	15		

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
45	15	40

Evaluation	
Assessment Tool	**Weight**
Midterm Exam	40%
Final Exam	40%
Quizzes	20%

Policy	
Course Policies	1. Your class attendance is mandatory. Absences in excess of 20% of the total lecture hours will result in your being dropped from the course with a failing grade. 2. Make-up exam appeals should be filed within two days of the missed exam. 3. Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed. 4. Unethical conduct, including cheating during examinations, will result in punishment by the university administration according to JUST punishment rules. 5. Quizzes will be posted on E-learning and if you missed any Quiz your grade will be marked Zero in that Quiz.
Evaluation	Midterm Exam 40% Quizzes 20% Final Exam 40% Total 100%
Class Materials	All class chapters PDF and PPTs, class announcements, Online meetings and discussion, and Exams ADDs will be posted on the Eleraning system. Students are responsible for ALL class materials presented or assigned on Eleraning system.

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