



Jordan University of Science and Technology
Faculty of Science & Arts
Biotechnology & Genetic Engineering Department

BT251 Cell Biology - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

3 Credit Hours. This course introduces students to the multidisciplinary nature of cell biology. It covers concepts on the basic structure of animal cells and gives the student theoretical knowledge of the essential activities performed by cells. The student will gain an understanding of a variety of cell processes and pathways, many of which occur in the organelles of eukaryotic cells. Students will learn about the molecular structure of plasma membranes and the multiple roles that the plasma membrane and intracellular membranes play in the life of the cell. They will be introduced to the signaling events that have profound effects on cellular function, cytoskeletal proteins that organize structures within cells, the organization of cells into tissues, the structural basis of cell information and the cellular defects that underlie cancer. Students will be exposed to the some of the critical scientific experimental evidence that has led to the discovery of these central concepts.

Teaching Method: Blended

Text Book

Title	Becker's World of the Cell
Author(s)	Jeff Hardin, Gregory Bertoni, Lewis J. Kleinsmith
Edition	9th Edition
Short Name	1
Other Information	

Instructor

Name	Prof. Homa Darmani
Office Location	PH1L1
Office Hours	
Email	darmani@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue : 10:30 - 11:30

Room: A2122

Prerequisites

Line Number	Course Name	Prerequisite Type
961070	BT107 General Biology Laboratory	Prerequisite / Study
961020	BT102 General Biology (2)	Prerequisite / Pass

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	A preview of the Cell - Chapter 1	From 1
Weeks 2, 3	Cells and Organelles - Chapter 4	From 1
Weeks 4, 5	Membranes: Their Structure, Function and Chemistry - Chapter 7	From 1
Weeks 5, 6	Transport across membranes: overcoming the Permeability Barrier - Chapter 8	From 1
Weeks 7, 8	The Endomembrane System and Peroxisomes - Chapter 12	From 1
Weeks 9, 10	Cytoskeletal Systems Chapter 13	From 1
Weeks 10, 11	Cell Movement: Motility and Contractility Chapter 14	From 1
Week 12	Beyond the Cell: Cell Adhesions, Cell Junctions and Extracellular Structures - Chapter 15	From 1
Weeks 12, 13	Signal Transduction Mechanisms: II. Messengers and Receptors	From 1
Weeks 14, 15	Cancer Cells Chapter 24	From 1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Be familiar with: a brief history of modern cell biology; Identify the dynamic properties of cellular organelles; Understand cell membrane structure and function. [1SLO1] [1L7K1]	30%	
Understand the ways substances are moved selectively across membranes and the significance of such transport processes to the life of the cell. Interpret the importance of intracellular membranes in organizing cellular activities and explain how compartmentalization within organelles contributes to cellular function. [1SLO1] [1L7K1]	30%	
Describe the cell cytoskeleton components, mechanisms of cell movement, elements of the extracellular matrix, cell junction types. Understand signal transduction events, initiated at the cell surface, that have profound effects on cell function. Describe the processes that play a central role in the development of cancer. [1SLO6] [1L7K1]	40%	

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
60					40

Relationship to NQF Outcomes (Out of 100%)	
L7K1	
100	

Evaluation	
Assessment Tool	Weight
First Exam	30%
Second Exam	30%
Final Exam	40%

Policy	
Class Attendance	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
Makeup Exams	Make-up exam appeals should be filed within one week of the missed exam
Cell phones	Cell phones are completely prohibited during examinations according to the university regulations i.e. you are not allowed to bring your phone into the exam hall. Cell phones must be turned off during lectures. No incoming or outgoing calls or text messages are allowed
Cheating	Unethical conduct, including cheating during examinations, will result in punishment by the university administration

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