



جامعة الزيتونة الأردنية
Al-Zaytoonah University of Jordan
كلية الآداب
Faculty of Arts



فكر حضاري وحوار متّمدن
Civilized Thought ...Civilized
Dialogue

"عراقة وجودة"
"Tradition and Quality"

QF04/0408-4.0E	Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Department of Basic Sciences
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Study Plan No.	2022/2023		University Specialization		Bachelor of Pharmacy	
Course No.	0420812		Course Name		Biology for medical sciences students	
Credit Hours	3		Prerequisite *Co-requisite		-	
Course Type	☐ Mandatory University Requirement	☐ University Elective Requirement	☒ Faculty Mandatory Requirement	☐ Support course family requirements	☐ Mandatory Requirement	☐ Elective Requirement
Teaching Style	☐ Full Online Learning		☒ Blended Learning		☐ Traditional Learning	
Teaching Model	☐ 2 Synchronous: 1 Asynchronous		☒ 1 Face to Face: 1 Asynchronous		☐ 3 Traditional	

Faculty Member and Study Divisions Information (to be filled in each semester by the subject instructor)

Faculty Member and Study Divisions Information (to be filled in each semester by the subject instructor)					
Name	Academic rank	Office No.	Phone No.	E-mail	
Office Hours (Days/Time)					
Division number	Time	Place	Number of Students	Teaching Style	Approved Model
				Blended Learning	1 Face to Face: 1 Asynchronous

Brief Description

This course provides knowledge about the unity and diversity of life covering the unique properties of living organisms, chemistry of the cell, cellular organization, plasma membrane structure and function, cell division, molecular DNA principles, and animal tissues.

Learning Resources

Course Book Information (Title, author, date of issue, publisher ... etc)	Sylvia Mader, Biology, 14 th Edition, McGraw-Hill, Jan 1, 2022
Supportive Learning Resources (Books, databases, periodicals, software, applications, others)	- Sylvia S. Mader, Michael Windelspecht, Human Biology, 15th Edition, McGraw-Hill, Jan 27, 2017 - Sylvia S. Mader, Connect 2 semester access card for biology, MCgRaw-Hill, Mar 24, 2015. - Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Jane B. Reece, Campbell Biology, 11th Edition, San Francisco, Calif ; London : Pearson Benjamin Cummings, Oct 29, 2016 - Jane B. Reece, Martha R. Taylor, Eric J. Simon, Jean L. Dickey, Campbell Biology: Concepts & Connections, 8th Edition, San Francisco, Calif ; London : Pearson Benjamin Cummings, Jan 6, 2014.
Supporting Websites	-



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The Physical Environment for Teaching	☒ Classroom	☐ Labs	☒ Virtual Educational Platform	☐ Others
Necessary Equipment and Software	Moodle			
Supporting People with Special Needs	-			
For Technical Support	E-learning & Open Educational Resources Center E-mail: ellearning@zuj.edu.jo Phone: +962 6 4291511 ext. 425/362.			

Course learning outcomes (K= Knowledge, S= Skills, C= Competencies)

No.	Course Learning Outcomes	The Associated Program Learning Output Code
Knowledge		
The student should be able to:		
K1	Identify the basic unit of life, differences between prokaryotes and eukaryotes, the differences between organelles and structures in animal and plant cells, and the animal organization and homeostasis	MK1
K2	Outline the structure, characteristics and functions of carbohydrates, lipids, proteins, and nucleic acids.	MK1
K3	Recognize the role of the cell membrane in the processes of osmosis, diffusion, and various transport mechanisms.	MK1
K4	Describe the key molecular basis of the cell cycle and the process of cellular reproduction, including mitosis.	MK1
K5	Outline the process of meiosis and chromosomal basis of heredity.	MK1
K6	Describe the structure and function of nucleic acids (DNA and RNA), the molecular biology of the gene, and the mechanisms regulating gene activity.	MK1
Skills		
The student should be able to:		
S1	Interpret cell division as it relates to reproduction, heredity, gene expression, and mutation impacts	MS2
Competencies		
The student should be able to:		
	-	

Mechanisms for Direct Evaluation of Learning Outcomes

Type of Assessment / Learning Style	Fully Electronic Learning	Blended Learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
Midterm Exam	30%	30%	30%	0%
Participation / Practical Applications	0	0	30%	60%



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Asynchronous Interactive Activities	30%	30%	0	0
Final Exam	40%	40%	40%	40%

Note: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

Schedule of Simultaneous / Face-to-Face Encounters and their Topics

Week	Subject	Learning Style*	Reference **
1	Introduction The Characteristics of Life - How to define life - How the biosphere is organized - How living things are classified - The process of science	Lecture	Chapter 1 pages: 2-15
2	Basic Chemistry Carbon: The backbone of Life - Chemical Elements - Compound and Molecules - Hydrogen Bonding	Lecture	Chapter 2 pages: 19-27
3	The Chemistry of Organic Molecules - Macromolecules are polymers, built from monomers - Carbohydrates serve as fuel and building material - Lipids are a diverse group of hydrophobic molecules - Proteins include a diversity of structures, resulting in a wide range of functions - Nucleic acids store, transmit, and help express hereditary information	Lecture	Chapter 3 pages: 35-54
4	Cell Structure and Function - Cellular Level of Organization - Prokaryotic cell - Eukaryotic cell	Lecture	Chapter 4 pages: 55-78
5	Cell Structure and Function	Lecture	Chapter 4 pages: 59-81
6	Cell Structure and Function	Lecture	Chapter 4 pages: 59-81
7	Membrane Structure and Function - Membrane Models - Plasma membrane structure and function - Permeability of the plasma membrane	Lecture	Chapter 5 pages: 79-95



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	Modification of cell surface		
8	Membrane Structure and Function	Lecture	Chapter 5 pages: 85-99
9	Animal Organization and Homeostasis - Types of tissues - Organs and organ systems	Lecture	Chapter 31 pages: 567-578
10	The Cell Cycle and Cellular Reproduction - The Cell Cycle - Mitosis and Cytokinesis - The Cell Cycle and Cancer - Prokaryotic Cell Division	Lecture	Chapter 9 pages: 141-159
11	The Cell Cycle and Cellular Reproduction	Lecture	Chapter 9 pages: 151-165
12	Meiosis and Sexual Reproduction - Halving the Chromosome Number - Genetic Variation - The Phases of Meiosis - Meiosis Compared to Mitosis - The Human Life Cycle - Changes in chromosome Number	Lecture	Chapter 10 pages: 160-174
13	Molecular Biology of The Gene - The Structure of DNA - Replication of DNA - The Genetic Code of Life - First step: Transcription - Second Step: Translation	Lecture	Chapter 12 pages: 200-217
14	Molecular Biology of The Gene	Lecture	Chapter 12 pages: 211-229
15	Regulation of Gene Activity Regulation Through Gene Mutations	Lecture	Chapter 13 pages: 232-234
16	Final Exam		

* Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.

** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.

Schedule of Asynchronous Interactive Activities (in the case of e-learning and blended learning)

Week	Task / Activity	Reference	Expected Results
1	Watch a recorded lecture	Video on the E-learning platform	
2	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment



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3	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
4	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
5	Watch a recorded lecture	Video on the E-learning platform	
6	Watch a recorded lecture	Video on the E-learning platform	
7	Watch a recorded lecture	Video on the E-learning platform	
8	Watch a recorded lecture	Video on the E-learning platform	
9	Midterm Exam	-	-
10	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
11	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
12	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
13	Watch a recorded lecture	Video on the E-learning platform	
14	Watch a recorded lecture	Video on the E-learning platform	
15	Watch a recorded lecture	Video on the E-learning platform	
16	Final Exam	-	-