Course Syllabus
Faculty of Arts and Science

Academic Department Basic Science and Humanities

Academic Year 2021 / 2022 Semester: Second

Course Title :	Biology 1
Course No. :	1501143
Prerequisite :	-
Concurrent :	-
Department :	Basic Science and Humanities
Coordinator :	Mrs. Wafa` Adnan
Mode of Instruction	**On campus Learning** - 2 hours online synchronous learning using MS Teams - 1 hour online asynchronous learning using Edu-Gate

*** Instructor:**

Lecturer	Office Phone	Room No.	Office Hours	E-mail
Mrs. Wafa` Adnan		223	(12-1) Sun. Thu. 11-12 Mon. Wed.	w_ahmad@asu.edu.jo

Course Description

The course deals with a brief review of the cell with details of water and the fitness of the environment, carbon and the molecular diversity of life, structure and function of macromolecules including carbohydrates, proteins, lipids and nucleic acids, a tour of the cell, membranes structure and function. The course also deals with metabolism, cellular respiration, photosynthesis, reproduction of the cell in addition to Mendel and the gene idea, molecular basis of inheritance and cellular reactions from gene to protein.

Intended Learning Outcomes

Upon the completion of the course, this module should lead to the following learning outcomes:

A. Knowledge and Understanding (Student should):

A1. Understand water's structure and properties that enable water to support all of life.

A2. Understand the concept of structure and function as a method of understanding biological activities.

A3. Understand cell theory, which explains that the cell is the basic functional unit in the organism.

A4. Understand metabolism.

A5. Understand probability law in predicting mendelian genetics. In addition to exceptions for this law.

A6. Understand the processes from gene to `protein, which enable the cell to express a gene.

B. Cognitive and Intellectual Skills (Student should):

B1. Define essential terms in biochemistry, cell biology, genetics and molecular biology.

B2. Recognize structure and function of water and biological molecules.

B3. Recognize cell structure and function for both prokaryotes and eukaryotes.

B4. Define metabolism and distinguish between anabolism and catabolism. Define ATP and enzymes.

B5. Recognize pathways of respiration, fermentation and photosynthesis.

B6. Describe types of cellular replication.

B7. Recognize mendelian laws and predicting the genetics of the coming offspring.

B8. Distinguish between mendelian and non-mendelian genetics.

B9. Recognize DNA replication, transcription and translation.

C. Subject Specific Skills (Student should):

C1. Distinguish between types of biological molecules.

C2. Distinguish between prokaryotic and eukaryotic cells.

C3. Utilize metabolism in understanding respiration and photosynthesis.

C4. Utilize Mendelian laws in predicting the character of the offspring.

D. Transferable Skills (Student should):

D1. Integrate knowledge about water in chemistry.

D2. Integrate knowledge about carbon compounds in chemistry.

D2. Integrate laws of energy in understanding biological processes.

D3. Integrate knowledge in Macromolecules in chemistry.

Program Learning Outcomes (PLOs):

1.5 Recognize certain subjects in biology, physics and mathematics that serve the chemistry disciplines

Course Learning Outcomes Alignment Matrix				
	CLO. 1	**CLO. 2**	**CLO. 3**	**CLO. 4**
PLO.1: 1.5	√	√	√	√

Course Contents and Schedule

Week	Date Day and	Topics to be covered	Method of instruction	CLOs	PLOs
1	Sun. 6/3/2022	Introduction Chapter 3 Polar water hydrogen bonding	MS Teams	**A1,D1**	**1.5**
	Tue. 8/3/2022		MS Teams		
	Thu. 10/3/2022		MS Teams		
2	Sun. 13/3/2022	Chapter 3 properties of water	MS Teams	**A1,D1**	**1.5**
	Tue. 15/3/2022		MS Teams		
	Thu. 17/3/2022		Online sessions (asynchronous)		
3	Sun. 20/3/2022	Chapter 4 Carbon and the Molecular Diversity of Life	MS Teams	**A2,B1,C1**	**1.5**
	Tue. 22/3/2022		MS Teams		
	Thu. 24/3/2022		Online sessions (asynchronous)		
4	Sun. 27/3/2022	Chapter 5 The Structure and Function of Molecules Carbohydrate	MS Teams	**A2,B2,C1**	**1.5**
	Tue. 29/3/2022		MS Teams		
	Thu. 31/3/2022		Online sessions (asynchronous)		
5	Sun. 3/4/2022	Chapter 5 Lipids Protein	MS Teams	**A2,B2,C1**	**1.5**
	Tue.5/4/2022		MS Teams		
	Thu. 7/4/2022		Online sessions (asynchronous)		
6	Sun. 10/4/2022	Chapter 5 Proteins Nucleic acid	MS Teams	**A2,B2,C1**	**1.5**
	Tue. 12/4/2022		MS Teams		
	Thu. 14/4/2022		Online sessions (asynchronous)		
7	Sun. 17/4/2022	Chapter 6 A tour of the cell	MS Teams	**A3,B3,C2**	**1.5**
	Tue. 19/4/2022		MS Teams		
	Thu. 21/4/2022		Online sessions (asynchronous)		

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8.	Sun. 24/4/2022 Tue. 26/4/2022 Thu. 28/4/2022	**MID Term Exam** Chapter 6 A tour of the cell	MS Teams MS Teams Online sessions (asynchronous)	**A3,B3,C2**	**1.5**
9	Sun. 1/5/2022 Tue. 3/5 Thu. 5/5/2022	**Eid al-Fiter Vacation 1-5/5/2022**	MS Teams MS Teams Online sessions (asynchronous)	**A3,B3,C2**	**1.5**
10	Sun. 8/5/2022 Tue 10/5/2022 Thu. 12/5/2022	Chapter 7 membrane structure and function	MS Teams MS Teams Online sessions (asynchronous)	**A3,B3,C2**	**1.5**
11	Sun. 15/5/2022 Tue. 17/5/2022 Thu. 19/5/2022	Chapter 8 An Introduction to Metabolism	MS Teams MS Teams Online sessions (asynchronous)	**A3,B3,C2**	**1.5**
12	Sun. 22/5/2022 Tue. 24/5/2022 Thu. 26/5/2022	Chapter 9 Cellular respiration	MS Teams MS Teams Online sessions (asynchronous)	**A4,B4,B5,B6,C3,D2**	**1.5**
13	Sun. 29/5/2022 Tue. 31/5/2022 Thu. 2/6/2022	Chapter 10 Photosynthesis Chapter 12 The cell cycle	MS Teams MS Teams Online sessions (asynchronous)	**A5, B6,D2**	**1.5**
14	Sun. 5/6/2022 Tue.7/6/2022 Thu. 9/6/2022	Chapter 13 Meiosis and the life cycle Chapter 14 Mendel and the gene idea	MS Teams MS Teams Online sessions (asynchronous)	**A5, B7 ,C4**	**1.5**
15	Sun. 12/6/2022 Tue. 14/6/2022 Thu .16/6/2022.	Chapter 16 The molecular basis of inheritance	MS Teams Assignment (asynchronous) Online sessions (asynchronous)	**A6,B8,D3**	**1.5**
16.	**Final Exam**				

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Grading Plan and Assessment Tools

Assessment Tools	Weights	Due date
Mid-term	30	
Assignments	5	
Quizzes	20	
Inter active lectures	5	
Group Work	--	
Presentation	--	
Reports	--	
Project	--	
Case-Study	--	
Final Exam	40	

Supplementary Reading

Textbook:

Campbell, N., Reece, J. and Mitchell G. 12th Edition. Biology

References:

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Subject Coordinator	**Mrs. Wafa` Adnan**	**Signature:** ----------
Head of Curriculum Committee	**Dr. Husam Miqdad**	**Signature:** ----------
Department Head	**Dr. Husam Miqdad**	**Signature:** ----------
Faculty Dean	**Dr. Hadeel Alsaed**	**Signature:** ----------

Copy to:

- Department Head.
- Head of Curriculum Committee.
- Course File.