



Course Syllabus
According to JORDAN National Qualification
Framework (JNQF)

Course Name: General Biology

Course Number: 11011281

General Course Information:

Course title	▪ General biology
Course number	▪ 11011281
▪ Credit hours	▪ 3 credit hours
▪ Education type	▪ [Online (Synchronous, Asynchronous)]
Prerequisites/corequisites	▪ Non
Academic Program	▪ Bachelor
Program code	▪ 01
Faculty	▪ Isra university
Department	▪ Faculty of science
Level of course	▪ Department of Chemistry
Academic year /semester	▪ First year
Awarded qualification	▪ First semester 2022/2023
Other department(s) involved in teaching the course	▪ Bachelor
Language of instruction	▪ Non
Date of production/revision	▪ English

Course Coordinator:

▪ Coordinator's name	▪ Ms. Razan abuassaf
▪ Office No	▪ Engineering Building 4228
▪ Office Phone extension number	▪ 2446
▪ Office Hours	▪ available on the electron portal and on the office door
▪ Email	▪ Razan.abuasaf@iu.edu.jo

Other Instructors:

▪ Instructor name	▪
▪ Office No	▪
▪ Office Phone extension number	▪
▪ Office Hours	▪
▪ Email	▪

Course Description (English/Arabic):

English	The chemistry of water, Biological macromolecules and lipids, Cell structure, cell membrane, cell respiration, cell cycle, Sexual life cycle and meiosis, and gene expression
Arabic	كيمياء الماء, الجزيئات الحيوية الكبيرة و الدهون, تركيب الخلية, الغشاء الخلوي, التنفس الخلوي, دورة حياة الخلية, الانقسام المنصف, التعبير الجيني

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

Author(s): N. A. Campbell and J. B. Reece
 Title: **Biology**
 Publisher: Benjamin Cummings, San Francisco 12th edition (2020)
www.campbellbiology.com

References: *Author(s), Title, Publisher, Edition, Year, Book website.*

Required book (s), assigned reading and audio-visuals:
 Other references will be announced later

Course Educational Objectives (CEOs):

1.	<ul style="list-style-type: none"> ▪ To provide students with basic knowledge of the concepts and themes of the study of life.
2.	<p>To give closer look to major functions in biology such as energy transformation, transport across membranes, protein synthesis, cell division</p> <ul style="list-style-type: none"> ▪

Intended Learning Outcomes (ILO's):

	<ul style="list-style-type: none"> ▪ Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire: 	Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descr
A	<ul style="list-style-type: none"> ▪ Knowledge and Understanding: 				
A1	<ul style="list-style-type: none"> ▪ The student Able to demonstrate how the structure of a water molecule allows it to interact with other molecules and the properties of water 	<ul style="list-style-type: none"> ▪ 1 	<ul style="list-style-type: none"> ▪ PLO 2 	<ul style="list-style-type: none"> ▪ 3 	
A2	<ul style="list-style-type: none"> ▪ The student able to Recognize the components of biological molecules 	<ul style="list-style-type: none"> ▪ 1 	<ul style="list-style-type: none"> ▪ PLO 2 	<ul style="list-style-type: none"> ▪ 1 	
A3	<ul style="list-style-type: none"> ▪ The student able to distinguish between 	<ul style="list-style-type: none"> ▪ 1 	<ul style="list-style-type: none"> ▪ PLO1 	<ul style="list-style-type: none"> ▪ 4 	

	cell types and cell structures				
A4	<ul style="list-style-type: none"> The student able to show the energy flow as in respiration and fermentation. 	2	PLO 1	3	
A5	<ul style="list-style-type: none"> The student able to demonstrate the mitosis and meiosis 	2	PLO 3	3	
A6	<ul style="list-style-type: none"> The student able to know how the processes of gene expression occur in the cell 	2	PLO 3	2	
B	<ul style="list-style-type: none"> Intellectual skills: 				
B1	<ul style="list-style-type: none"> The student able to explain how plasma membranes control transport into and out of cells. 	2	PLO3	2	
C	<ul style="list-style-type: none"> Subject specific skills: 				
D	<ul style="list-style-type: none"> Transferable skills: 				

***Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

**** Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

<p>Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the chemistry program will demonstrate:</p>	Descriptors**		
	K	S	C

1.	Describe the fundamental scientific principles and theories across the four subfields of chemistry (Organic, inorganic, analytical and physical).	√		
2.	Identify and confirm chemical compounds structures as well as determine chemical composition	√		
3.	Establish and concludes mechanisms of physical and chemical processes in addition to the ability of mastering qualitative and quantitative determination			√
4.	Solve the scientific problems using different mechanisms and procedures based on critical thinking.		√	
5.	Conduct scientific experiments in chemistry.			√
6.	Commitment and interest in lifelong learning and collaborate effectively with other people in a team.			√
7.	Prepare logical, organized, and concise written reports, and oral and poster presentations that effectively communicate chemical content to other scientists.		√	
8.	Commitment to the ethical principles of chemical research.			√
9.	Find information about chemistry through databases and information		√	
10.	Evaluation of calculations in chemistry experiments and information analysis using computer software.			√
11.	Demonstrate safety laboratory techniques.		√	

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule (please choose the type of teaching)

Face to Face

Hybrid (2 Lectures Face – To - Face +1 Lecture Asynchronous)

Hybrid (1 Lectures Face – To - Face +1 Lecture Asynchronous)

Online (2 Lectures Synchronous +1 lecture Asynchronous)

Week	First Hour (.....)	Second Hour (.....)	Third Hour (.....)	Ach. ILOs	Ach. PLOs	Descriptors*
1	The chemistry of water	The chemistry of water	The chemistry of water	A1	PLO 2	K
2	Biological macromolecules and lipids	Biological macromolecules and lipids	Biological macromolecules and lipids	A2	PLO 2	K
3	Biological macromolecules and lipids	Biological macromolecules and lipids	Biological macromolecules and lipids	A2	PLO2	K
4	Cell structure	Cell structure	Cell structure	A3	PLO1	K
5	Cell structure	Cell structure	Cell structure	A3	PLO1	K
6	Cell structure	Cell structure	Cell structure	A3	PLO1	K

7	cell membrane	cell membrane	cell membrane	B1	PLO3	K
8	cell membrane	cell membrane	cell membrane	B1	PLO3	K
9	cell respiration	cell respiration	cell respiration	A4	PLO 3	C
10	cell respiration	cell respiration	cell respiration	A4	PLO 3	C
11	Mitosis	Mitosis	Mitosis	A5	PLO 3	C
12	Mitosis	Sexual life cycle and meiosis	Sexual life cycle and meiosis	A5	PLO 3	C
13	Sexual life cycle and meiosis	Sexual life cycle and meiosis	Sexual life cycle and meiosis	A5	PLO 3	C
14	Expression of genes	Expression of genes	Expression of genes	A6	PLO 3	C
15	Expression of genes	Expression of genes	Expression of genes	A6	PLO 3	C
16	Final Exam					

* K: Knowledge, S: Skills, C: Competency

Teaching Methods and Assignments:

- Development of ILOs is promoted through the following teaching and learning methods:
 - √ Interactive videos
 - Practice Labs
 - √ Discussion Forums
 - √ Quizzes
 - √ Other Interactive online activities
 - Reports

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.

- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) 20%
- Midterm 30%
- Final Exam 50%

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- **PC / Laptop with webcam and mic**
- **Internet Connection**
- **Access to the IU E-Learning Platform at: <https://elearn.iu.edu.jo/>**
- **E-learning plan**
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

Assessment Tools implemented in the course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Practice Labs
- Discussion Forums
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching
- Others:.....

Responsible Persons and their Signatures:

Course Coordinator	Razan abuassaf	Completed Date	15/10/2022
		Signature	
Received by (Department Head)	Dr. manal khabas	Received Date	16/10/2022
		Signature	