



The University of Jordan
Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	General Biology
2	Course number	5501101
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	-
5	Program title	Bachelor in Biology
6	Program code	5503
7	Awarding institution	The University of Jordan-Aqaba
8	Faculty	Marine Sciences
9	Department	Biology
10	Level of course	First year
11	Year of study and semester (s)	Second semester 2017/2018
12	Final Qualification	BSc.
13	Other department (s) involved in teaching the course	non
14	Language of Instruction	English
15	Date of production/revision	2/2017

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

** Instructor : Majduleen Sbaihat.

** E-mail: m.sbaihat@ju.edu.jo

** Office hours: (Sun, Tuesday, Thursday) → 10:00 -11:00 AM & 12:00 – 01:00 PM

** Office #: Faculty of Marine Sciences – Room # 1

** Phone Numbers : 032090450 Ext. 35079

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

18. Course Description:

As stated in the approved study plan.

Internal structure of the cell, molecules of the cell, metabolism, respiration & photosynthesis, cell-cell signaling, cell division, mendelian inheritance, molecular biology of the gene, DNA technology, chemical signals in plants and animals, phylogeny & systematic introduction to ecosystem.

19. Course aims and outcomes

A- Aims:**Upon successful completion of this course, students will be able to:**

- 1- List and explain the four properties of water that emerge as a result of its ability to form hydrogen bonds and distinguish between the following sets of terms: hydrophobic and hydrophilic substances; a solute, a solvent, and a solution. In addition, define acid precipitation, causes and results.
- 2- Study the characteristics of carbon as bioelements and their the molecular diversity of life, also study the functional groups and their important in the chemistry of life.
- 3- List the four major classes of macromolecules, carbohydrates, protein, lipid and nucleic acid, and describe the characteristics distinguishing between them.
- 4- Identify prokaryote, plant and animal cell organelles and describe their structure and functions, also recognize the common features of cells.
- 5- Study the membrane structure and function, also distinguish between the following pairs or sets of terms: peripheral and integral membrane proteins; channel and carrier proteins; osmosis, facilitated diffusion, and active transport; hypertonic, hypotonic, and isotonic solutions. In addition explain how transport proteins facilitate diffusion, explain how an electrogenic pump creates voltage across a membrane, and name two electrogenic pumps, and finally explain how large molecules are transported across a cell membrane
- 6- Study the process of metabolism; by distinguish between the following pairs of terms: catabolic and anabolic pathways; kinetic and potential energy; open and closed systems; exergonic and endergonic reactions. Also explain in general terms how cells obtain the energy to do cellular work, explain how ATP performs cellular work, explain why an investment of activation energy is necessary to initiate a spontaneous reaction, also describe the mechanisms by which enzymes lower activation energy and describe how allosteric regulators may inhibit or stimulate the activity of an enzyme.
- 7- Describe the structural organization of the prokaryotic genome and the eukaryotic genome, also list the phases of the cell cycle; describe the sequence of events during each phase and list the phases of mitosis and describe the events characteristic of each phase.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...**Learning outcomes:****• Knowledge and understanding**

At the end of this module, students will be able to:

- 1- List and explain the four properties of water that emerge as a result of its ability to form hydrogen bonds.
- 2- Distinguish between the following sets of terms: hydrophobic and hydrophilic substances; a solute, a solvent, and a solution. In addition, define acid precipitation, causes and results.
- 3- Study the characteristics of carbon as bioelements and their the molecular diversity of life, also study the functional groups and their important in the chemistry of life.
- 4- List the four major classes of macromolecules, carbohydrates, protein, lipid and nucleic acid, and describe the characteristics distinguishing between them.
- 5- Identify prokaryote, plant and animal cell organelles and describe their structure and functions, also recognize the common features of cells.
- 6- Study the membrane structure and function.
- 7- Distinguish between the following pairs or sets of terms: peripheral and integral membrane proteins; channel and carrier proteins; osmosis, facilitated diffusion, and active transport; hypertonic, hypotonic, and isotonic solutions. In addition explain how transport proteins facilitate diffusion, explain how an electrogenic pump creates voltage across a membrane, and name two electrogenic pumps, and finally explain how large molecules are transported across a cell membrane
- 8- Study the process of metabolism : fermentation, cellular respiration and photosynthesis; by distinguish between the following pairs of terms: catabolic and anabolic pathways; kinetic and potential energy; open and closed systems; exergonic and endergonic reactions. Also explain in general terms how cells obtain the energy to do cellular work, explain how ATP performs cellular work, describe the mechanisms by which enzymes lower activation energy and describe how allosteric regulators may inhibit or stimulate the activity of an enzyme.
- 9- Describe the structural organization of the prokaryotic genome and the eukaryotic genome, also list the phases of the cell cycle; describe the sequence of events during each phase and list the phases of mitosis and describe the events characteristic of each phase.

• Cognitive skills (thinking and analysis).

- The thinking skills will be developed by encouraging students to conclude answers to different questions that the instructor intends to use during the presentation of the scientific material.

20. Topic Outline and Schedule:

Chapter	Weeks	Topic
3	14 Feb. – 21 Feb.	Water and Fitness of the Environment
4	23 Feb. – 28 Feb.	Carbon and the Molecular Diversity of Life
5	1 Mar. – 10 Mar.	The Structure and Function of Macromolecules
6	13 Mar. – 24 Mar.	A Tour of the Cell
MIDTERM EXAM: 11/3/2017 – 29/3/2017		
7	27 Mar. – 5 Apr.	Membrane Structure and Function
8	7 Apr. – 14 Apr.	An Introduction to Metabolism
9	17 Apr. – 21 Apr.	Cellular Respiration
10	24 Apr. – 28 Apr.	Photosynthesis
12	1 May. – 7 May.	The Cell Cycle
FINAL EXAM: 9/5/2017 – 17/5/2017		

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Power point lectures, questions and discussions, videos, home works.
- Assignments such as preparing of reports on topics related to the subject.
- Students are requested to present a power point presentation on a subject of his/her choice within the framework of the study material.
- Quizzes and evaluation of students.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Quizzes

Home work / Assignments.

Attendance and Participation in the class

Mid Exam

Final Exam

23. Course Policies:**A- Attendance policies:**

1- I strongly recommend you attend every lecture. Missing any lecture will put you at a distinct disadvantage when test taken.

2- Any student with four or more unexcused absences from lecture can be legally dropped from the course.

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

The only valid excuses for missing an exam are: death in the family, illness, or accident. In this case you must

provide evidence of some kind and you must report me within 3 days.

C- Health and safety procedures:

Students who miss the exam due to illness or other excuse must notify me within the first week after the exam, so make up arrangements can be Made.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

1. Students are not expected to talk in class while the instructor is lecturing
2. After two warning of taking or any other classroom disruption, the Student will be automatically removed from the class.
3. Any act of cheating, or academic misconduct is subject to penalties.
4. The minimum penalty for any students caught cheating will receive a zero on that test.

E- Grading policy:

Type	Grading
Quizzes	10%
Home work / Assignments.	10%
Attendance/participation	10%
Midterm exam:	30%
Final Exam:	40%
Total	100%

Exams: The examinations will consist of any combination of Multiple choice, short answer, fill in the blank, matching, identification of figures or essay questions.

F- Available university services that support achievement in the course:

Library sources are available, internet, laboratory facilities.

24. Required equipment:

1. Lab top
2. Data how
3. white board

2°. References:

A- Required book (s), assigned reading and audio-visuals:

Textbook: Campbell Biology Book, Eighth Edition.

B- Recommended books, materials, and media:

2٦. Additional information:

Name of Course Coordinator: **Ins. Majduleen Sbaihat** Signature: ----- Date: **7/2/2018**

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File