

JORDAN UNIVERSITY OF SCIENCE & TECHNOLOGY
Department of Biotechnology & Genetic Engineering

General Biology BT101
First semester 2020/2021

Course description

Biology 101 is dedicated to the study of the molecular and cellular basis of life. Topics include cell structure and physiology, information flow, metabolism, cellular reproduction, Mendelian and modern genetics. This course is designed for students planning to major in biotechnology, genetics or a related discipline.

Instructor

Osamah Batiha, PhD.

Office Location

PH1, 3ed flour, oybatiha@just.edu.jo

Class Meetings

Mon & Wed, 1-2:30 PM, Online

Office Hours

Online (TBA)

I'll be always eager to discuss course-related issues with you. Also, you are encouraged to contact me by e-mail or in person to set up an appointment.

Grading

Quizzes	: 10%
Midterm	: 40%
Final Exam	: 50% (First and Second exam materials will be included in the final exam)

Quizzes (Online)

I have the discretion to have announced and/or unannounced quizzes. Failure to take a quiz will result in a grade of zero for that quiz. It is your advantage to attend all (the maximum number) quizzes as your lowest mark will be dropped out.

Exams

Midterm and final exams will at the university campus (paper-exam).

Required Textbook

Biology: A global Approach, (11th Edition), Campbell, Urry, Cain, Wasserman, Minorsky, Reece. Pearson Education Inc., 2017.

Course Web Site and teaching method

e-learning will be used to post general information about the course, as well as distribute lecture slides and any additional material. Please check the course site frequently for updates to the course information and syllabus. Other softwares might be also used such as Zoom, Bigbluebottom (through the elearning) and Microsoft teams. The official communication between us is the e-learning messages and emails, Facebook and other social network applications are not considered.

Power point recorded lectures + online review sessions will be implemented during this course.

Attendance policy

It's your responsibility to attend lectures and exams. It's to your advantage to attend lectures, as most of the exam material will be covered during lectures.

Course Content and Tentative Schedule

Week	Topics	Chapter in Text (Pages)
1 + 2	Biological Macromolecules and Lipids	5 (114-139)
3 + 4	Cell Structure and Function	7 (163-195)
5	Cell Membranes	8 (196-212)
6	Cell Respiration	10 (236-258)
Midterm Exam (TBA*)		
8	Mitosis	12 (284-302)
9	Sexual Life Cycle and Meiosis	13 (304-318)
10 + 11	Mendelian Genetics	14 (319-343)
11 + 12	Linkage and Chromosomes	15 (344-363)
13 + 14	Nucleic Acids and Inheritance	16 (364-384)
Final Hour Exam (TBA*)		

*TBA: To Be Announced

Biotechnology & Genetic Engineering Program Learning Outcomes (PLOs)

Upon completion of the BSc. in Biotechnology and Genetic Engineering degree students will be able to:

PLO1

Demonstrate knowledge and comprehension of core concepts, which includes but is not limited to knowledge of cell biology, biochemistry, genetics, molecular biology, microbiology and immunology.

PLO2

Exhibit basic laboratory skills necessary for the field of biotechnology and genetic engineering.

PLO3

Utilize and apply knowledge of biotechnology in various applications like industry, medicine, agriculture and other related fields

PLO4

Demonstrate effective reading, critical thinking, and problem-solving skills as well as exhibiting effective oral and written communication skills

PLO5

Recognize and understand ethical and social implications of the use of biotechnology and genetic engineering.

PLO6

Demonstrate knowledge of contemporary issues in biotechnology and genetic engineering.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

No.	Outcome (CLO)	Reference chapter	Weight (%)	Relationship of the CLO's to the PLO's
1	Describe the basic properties of the major classes of biological molecules needed for life	5	15	PLO1
2	Compare and contrast the structures, reproduction, and subcellular characteristics of prokaryotic and eukaryotic cells	7 9	15	PLO1
3	Describe the structure of cell membranes and the movement of molecules across a membrane	8	10	PLO1
4	Describe and explain the principles of Bioenergetics	10 11	15	PLO1
5	Describe the importance of cell division in maintaining the continuity of life	12 13	20	PLO1
6	Define and apply the principles of Mendelian genetics and its modern extensions to the unity and diversity of life.	14	10	PLO1 PLO4
7	Understand the molecular, structural and chromosomal basis of heredity.	15 16	15	PLO1