



**The Hashemite University**  
**Faculty of Science**  
**Course Syllabus**

**Department of Biology and Biotechnology**

**Course Title:** Biotechnology

**Course Number:** 170104321

**Pre-requisite:** General Microbiology

**Credit Hours:** 3

**Designation:** Required

**Instructor:** Dr. A. Al-Ghzawi

**Instructor's E-mail:** ghzawi @hu.edu.jo

**Office Hours:**

**Course Description (Catalog):** This course covers the biological and technological principles of biotechnology including the utilization of organisms in industry, agriculture, medicine, and environment. The major techniques applied in biotechnology will be discussed.

**Text Book:** Biotechnology: an introduction, Susan Barnum (2005). Thomson/Brooks/Cole, Belmont, CA

**References:** Biotechnology : an introduction, Ignacimuthu, S.(2008). Alpha Science International Ltd.,Oxford, U.K.

**Major Topics Covered:**

Topics	No. of Weeks	Contact Hours*
Introduction to biotechnology	1	3
Classical Biotechnology	1	3
Modern Biotechnology	1	3
Basic principles of recombinant DNA technology	1	3
Proteins as products	2	6
Microbial biotechnology	2	6
Plant biotechnology	1	3
Animal Biotechnology	2	6
Environmental Biotechnology	1	3
Products of Biotechnology	2	6
Tools of Biotechnology	1	3
<b>Total</b>	<b>15</b>	<b>45</b>

\*Contact Hours include lectures, labs and exams.

**❖ Specific Outcomes of Instruction (Course Learning Outcomes):**

After completing this course units, the students will be able to:

	Course Learning Outcomes (CLO)	(SO*)
<b>CLO1.</b>	Learn the basic principles of biotechnology	(a), (b)
<b>CLO2.</b>	Identify the various tools used in biotechnology.	(c), (e), (j), (k)

<b>CLO3.</b>	Learn the various products and applications of biotechnology.	(a), (d), (e), (f), (k)
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	<b>Course Learning Outcomes (CLO)</b>	<b>(SO*)</b>
<b>CLO4.</b>	learn the tools they need to understand the methods, implications, and debate surrounding the use of biotechnological products now and in the future	(a), (e), (f), (g), (i), (k)

\*(SO) = Student Outcomes Addressed by the Course.

❖ **Student Outcomes (SO) Addressed by the Course:**

#	Outcomes Description	Contribution
	<b>Applied and Natural Sciences Student Outcomes</b>	
(a)	an ability to apply knowledge of mathematics, science, and applied sciences	H
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	M
(c)	an ability to formulate or design a system, process or program to meet desired needs	M
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify and solve applied sciences problems	M
(f)	an understanding of professional and ethical responsibility	M
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of solutions in a global and societal context	M
(i)	a recognition of the need for, and an ability to engage in life-long learning	M
(j)	a knowledge of contemporary issues	M
(k)	an ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice.	M
<b>H = High, M = Medium, L = Low</b>		

**Grading Plan:**

first exam:	30 points
Second exam:	300 points
Final Exam:	40 points

**General Notes: (Attendance Policy)** students are expected to attend every class and arrive on time in compliance with HU regulations. In case you find yourself in a situation that prevents you from attending class or exam, you have to inform your instructor. If you miss more than 6 classes for the (Sunday, Tuesday, and Thursday model) or 4 classes for the (Monday and Wednesday Model), you cannot pass the course. Makeup excuses will be accepted only for very limited justified cases, such as illness and emergencies. Changing your section without informing your instructors is not accepted at all.