The Hashemite University
Faculty of Science
Course Syllabus

Department of Biology and Biotechnology

Course Title : Molecular Biology	**Course Number:** 1801042322
Pre-requisite: Biochemistry	**Credit Hours** : 2
Designation : Required	**Instructor** : Salem Al-Maloul
Office Hours:	**Room:**

Course Description: In this course, emphasis on gaining knowledge about the nature of macromolecules (Proteins and Nucleic Acids) and understanding the interactions that make them up. The course also highlights the various cellular activities carried out and involved the genetic material (i.e., DNA). These cellular activities include DNA replication, transcription, translation, mutagenesis and mutations, and DNA repair mechanisms in both prokaryotes and eukaryotes.

Text Book: Essentials of Molecular Biology 4th ed., by: G. M. Malacinski, Jones & Bartlet Publisher, 2002.

References: Molecular Cell Biology 5th ed., Lodish H. et al, W.H. Freeman & Co, 2003.

Major Topics Covered:

Topics	No. of Weeks	Contact Hours*
Macromolecules: Proteins, Nucleic Acids & Noncovalent Interactions	1	2
Nucleic Acids	2	4
The Physical Structure of Protein	1	2
Macromolecular Interactions: The Structure of Complex Aggregates	2	4
The Genetic Material	1	2
DNA Replication	2	4
Transcription	2	4
Translation	2	4
Mutations & Mutagenesis	1	2
DNA Repair Mechanisms	1	2
Total	**15**	**30**

*Contact Hours include only lectures and exams. Lab contacts are separate.

❖ Specific Outcomes of Instruction (Course Learning Outcomes):

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

	Course Learning Outcomes (CLO)	(SO*)
CLO1.	Understand the nature of proteins and nucleic acids.	(a-d)
CLO2.	Understand the factors that determine the 3-dimensional structure of macromolecules.	(a-f)
CLO3.	Understand the relationship that exists between proteins and DNA	(a-h)
CLO4.	Understand the aspects of the biological dogma.	(i-l)
CLO5.	Understand the aspects of changes that occur to the genetic material and the mechanisms of repair.	(h)

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

❖ Student Outcomes (SO) Addressed by the Course:

#	Outcomes Description Applied and Natural Sciences Student Outcomes	Contribution
(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	L
(d)	an ability to function on multidisciplinary teams	L
(e)	an ability to identify and solve applied sciences problems	M
(f)	an understanding of professional and ethical responsibility	H
(g)	an ability to communicate effectively	H
(h)	the broad education necessary to understand the impact of solutions in a global and societal context	H
(i)	a recognition of the need for, and an ability to engage in life-long learning	H
(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.	H

H = High, **M** = Medium, **L** = Low

Grading Plan:

First Exam:	30 points	To be announced later
Second Exam:	30 points	To be announced later
Final Exam:	40 Points	To be announced by registrar

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 5 classes of your schedule 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.