



Faculty of Medicine

Major: Doctor of Medicine

Academic Year: 2022/2023

Subject: Molecular Biology

COURSE SYLLABUS

Student's Copy

Updated on 26th of Sep. 2023



1. Course information:

Theory		Practical	
Course Title:	Molecular Biology	Course Title:	
Course Code:	1001104	Course Code:	
Co-Requisite:		Co-Requisite:	
Prerequisite:	Biology	Prerequisite:	
Course Credit Hours:	3	Course Credit Hours:	
Class Location:	Faculty of Medicine	Class Location:	
Department: Basic Medical Sciences			

2. Instructor Contact Information:

Coordinator:	Dr. Noor Al-Saigh
Instructor(s):	Dr. Noor Al-Saigh
Email:	noorsaigh@isums.edu.jo
Office:	
Office Hours:	Sun: 12:00-13:00, 14:00-15:00 Mon: 12:00-13:00 Tue: 12:00-13:00, 14:00-15:00 Wed: 12:00-13:00 Thu: 12:00-13:00, 13:00-14:00



3. Course Description: Our Molecular Biology course focuses on the structure and function of biologically important molecules, giving you a range of theoretical knowledge about the major practical skills.

Student will learn about molecular and chromosomal bases of inheritance. How cells able to communicate, regulation of gene expression and application of molecular tools in biotechnology. Advances in molecular biology have led changing the face of modern biology, especially in areas of medicine and biotechnology.

These topics will help the students to understand the molecular basis of illnesses and use genetic manipulation in biotechnology to make valuable products.

4. Resources Available to Students:

1. Urry, L. A. Cain, M. L. Wasserman S. A. Minorsky, P. and Orr, R. B. (2020): *Campbell Biology* 12th edition. (New York. NY: Person).
2. Recommended Ref.: Lodish H, Arnold B, Kaiser C A, Krieger, Bretscher A, Ploegh H, Amon A, Martin KC. *Molecular Cell Biology*. 4th ed. New York, W.H. Freeman. 2021.

3. Teaching Methods

- a. Lectures.
- b. Discussion and problem solving.
- c. Individual and groups activities.
- d. In-class competition.

4. Intended Learning Outcomes (ILOs):

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

1. **Understand** the molecular bases of inheritance.
2. **Explain** the chemical and molecular processes that occur in and between cells, chiefly deals with interactions among various systems of the cell, including those between DNA, RNA and proteins and learning how these are regulated.
3. **Build** their understanding in biotechniques and their applications.
4. **Be able** to design and implement experimental procedures using relevant techniques.
5. **Identify** the most significant molecular and cell-based methods used today to expand their understanding of biology.



5. Course Policies:

To be explained to students at the first meeting:

1. Attendance Policies:

A. Attendance Policy (absences and tardiness for a traditional course):

- a. Students must attend all classes of this course.
- b. Any student with an absence of 15% of the classes of any course, will be illegible to sit for the final exam and will result in a failing grade being assigned in this course.
- c. Excused absences include documented illness, deaths in the family, and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have valid excuses. Consideration will also be given to students whose dependent children experience serious illnesses.
- d. Students with a legitimate reason to miss a required activity must request an approved absence through Student Academics. Unexcused absence from a scheduled examination or quiz may result in (0 %) being assigned for that assessment. Unexcused absence from an activity for which attendance is may be considered an issue of Professionalism.
- d. Any student who arrives late will not be allowed to attend the class and will be marked absent.

B. Exam Attendance:

- a. A student who is more than 10 minutes late, will not be permitted to submit the exam.
- b. A student who is late more than 30 minutes will not be permitted to submit the final exam, and no student will be permitted to leave the exam center before the elapse of 30 minutes.

2. Exams Policies:

- a. Students are expected to take their exams on time and as scheduled by their instructors.
- b. Student who are unable to take (quiz, midterm or final) exam due to any reason should contact their instructor immediately.
- c. Make-up exams are of the responsibility of faculty committee.
- d. A final exam, paper, or project is required in all courses.



- e. Seminars and workshops are included in evaluation criteria.
- f. Only registered undergraduate and graduate credit students are allowed to take final exams.
- g. If you are unable to take the final exam at the scheduled time without any acceptable excuse, you may not be allowed to rearrange the final exam separately (Make-up).
- h. If you attend the final exam and do not submit the exam sheet, or do not complete the exam for any reason, you are not allowed to complete the final exam at another time or appeal for a final make-up exam and will be assigned failing for the final exam.
- i. If you do not take your final exam and did not withdraw from the course by the withdrawal deadline you will assign a failing grade for the final exam.

3. Cheating Policies: Cheating is officially defined as giving or attempting to give, obtaining or attempting to obtain, information relative to an examination or other work that the student is expected to do alone and not in collaboration with others, or the use of material or information restricted by the instructor. Plagiarism is no lesser an offense than cheating, it means repeating another's sentences as your own, adopting a particularly apt phrase as your own, paraphrasing someone else's argument as your own, and presenting someone else's line of thinking in the development of a thesis as though it were your own.

4. Penalty for cheating and plagiarism: The failing grade, shall be assigned for that piece of work to any students cheating or plagiarizing.

5. Mobiles: Mobile phones should be kept turned off or silent while in class. Usage of mobile phones is not allowed in classes in any form (talking and/or texting).

6. Course Grading Criteria:

Assessment Tools	Weight (100%)	Description
Exams (Midterm and Final)	100%	<ul style="list-style-type: none">- MCQs and fill in the space questions- True/ False- Short essay- Matching- Identifying structures in drawing.
Quizzes and other assessments	0%	<ul style="list-style-type: none">- MCQs and fill in the space questions- True/ False

7. Course Outlines/ Schedule:

Week	Topic	Chapter	Estimated number of hours	Teaching method		ILOs
				Theoretical Lectures	Practical Laboratories	
1,2	Mendel and the Gene Idea	Chapter 14	6	√	-	1, 2, 3, 4,5
3, 4	The Chromosomal Basis of Inheritance	Chapter 15	4	√		1, 2, 3, 4,5
5, 6	The Molecular Basis of Inheritance	Chapter 16	6	√	-	1, 2, 3, 4,5
6, 7	Gene Expression: From Gene to Protein (transcription, translation)	Chapter 17	4	√		1, 2, 3, 4,5
8	Midterm Written Exam			√	-	1, 2, 3, 4, 5
9, 10, 11	Regulation of Gene Expression	Chapter 18	7	√	-	1, 2, 3, 4, 5
11, 12	DNA as a Tool of Biotechnology	Chapter 20	4	√	-	1, 2, 3, 4, 5
13, 14	Cell Communication and G-Protein Coupled Receptor	Chapter 11	9	√		1, 2, 3, 4,5
	Final Written Exam			√	-	1, 2, 3, 4, 5

