

Course E-Syllabus

1	Course title	Molecular Biology
2	Course number	5501424
3	Credit hours	Three hours
	Contact hours (theory, practical)	Three hours per week
4	Prerequisites/corequisites	5501331
5	Program title	Bachelor degree in Biological Sciences
6	Program code	550
7	Awarding institution	The University of Jordan-Aqaba
8	School	Basic and Marine Sciences
9	Department	Marine Biology
10	Level of course	Forth year
11	Year of study and semester (s)	Second Semester 2018/2019
12	Final Qualification	B.Sc.
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input checked="" type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	

18 Course Coordinator:

Dr. Zeinab H. Arabeyyat

Office number: 342

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19 Other instructors:

N/A

20 Course Description:

As stated in the approved study plan.

Molecular structure in some marine organisms and description of the factors that affect their molecular structure. DNA and amino acids, gene replication, gene expression, DNA replication and mutants, DNA repair.

21 Course aims and outcomes:

A- Aims:

To become familiar with the basic molecular topics in biology, such as the molecular structure and function of genetic material, chromosomes, chromatin structure, mutations, DNA replication, DNA repair and recombination, basic mechanisms of transcription, mRNA processing and translation.

B- Intended Learning Outcomes (ILOs):

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

✓ **(Knowledge and understanding)**

At the end of this module, students will be able to describe the basics of molecular biology.

✓ **Cognitive skills (Thinking and analysis)**

The thinking skills will be developed by repetition of long and hard terms in molecular biology. To make this happen, the first step is to bring the skill to a conscious level where the student is deliberately thinking about improving this skill.

By participating in new activities, students can stretch their brains. In other words, the more a student practices or rehearses a new activity, the greater the number of neurons that get involved and the active space in the brain devoted to this new activity. The brain then expands to accommodate the assignment. Moreover, immediate feedback provides these types of close proximity associations. Good brain training needs to facilitate immediate feedback of two types – positive feedback and corrective feedback. One-on-one training makes this possible. With these techniques, learning is made possible on many levels.

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1 & 2	5-6	The structure of DNA	Synchronous lecture	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.
3 & 4	5-6	Genome organization: from nucleotides to chromatin	Synchronous lecture	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.
5 & 6	5-6	From gene to protein	Synchronous lecture	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.
7 & 8	5-6	DNA replication	Asynchronous lecture/zoom and Moodle	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.
9, 10 & 11	9	Transcription in eukaryotes and prokaryotes	Asynchronous lecture/zoom and Moodle	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.

12, 13 &14	8	Gene expression	Asynchronous lecture/zoom and Moodle	Direct questions, Quizzes, and Homework	Weaver, 2011; and Allison, 2007.
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- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Quizzes	20	The structure of DNA, Genome organization: from nucleotides to chromatin, DNA replication, and Transcription in eukaryotes and prokaryotes.	-	Paper test in the class. Using Google forms and Messenger after the Covid-19 pandemic.
Homework Assignment	20	From gene to protein, DNA replication, Transcription in eukaryotes and prokaryotes, and Gene expression.	-	E-Learning and Email
Oral Presentation or Summary Report	10	Optional selection from all topics.	-	Zoom, E-Learning and Email
Final Exam	50	DNA replication, Transcription in eukaryotes and prokaryotes, and Gene expression.	-	Google forms and zoom

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

Computer and internet connection are required for watching lectures, reading the module documents and reviewing related eBooks, applying for online test, answering and submitting homework.

25 Course Policies:

A- Attendance policies:

- **I strongly recommend students attend every lecture. Missing any lecture will put them at a distinct disadvantage when test taken.**

- **Any student with four or more unexcused absences from lab 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, student must provide evidence of some kind and 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:

- **Students are not expected to talk loudly while the lecturer is lecturing,**
- **After two warning, the Student will be automatically removed from the class or the online lecture.**
- **Any act of cheating, or academic misconduct is subject to penalties.**
- **The minimum penalty for any students caught cheating will receive a zero on that test.**

E- Grading policy:

Type	Grading
Homework Assignment:	20%
Quizzes:	20%
Summary report:	10%
Final Exam:	50%
Total	100%

Exams: The examinations consist of any combination of multiple choice, and true or false questions.

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

Library sources are available and internet.

26 References:

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

- ✓ **Allison L. A. (2007). Fundamental Molecular Biology, Blackwell Publishing, Malden, MA, USA. 748 pp.**
- ✓ **Weaver, RF. Molecular Biology. New York, NY. McGraw-Hill publisher. 5th edition, 892 pp.**
- ✓ **Other readings (Will be provided as PDF).**

B- Recommended books, materials and media:

Electronic online-free books.

YouTube.

Moodle.

27 Additional information:

N/A

Name of Course Coordinator: -- **Dr. Zeinab H. Arabeyyat** --Signature: ----- Date: -----

Head of Curriculum Committee/Department: ----- Signature: -----

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

Head of Curriculum Committee/Faculty: ----- Signature: -----

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