



**Jordan University of Science and Technology**  
**Faculty of Science & Arts**  
**Applied Biological Sciences Department**

BIO742 Molecular Biology

Second Semester 2017-2018

**Course Catalog**

3 Credit Hours. Molecular Biology is an extensive and diverse field of venture. It is responsible for determining how complex biological systems work; from the coding potential of DNA through to the regulated activity of proteins and large protein complexes. The course emphasizes enhancing critical thinking and communication skills in the context of understanding research methodology, experimental design and the scientific process as applied to the field of Molecular Biology. The course will primarily use cutting-edge original research literature from the Molecular Biology field to promote student understanding of the experimental research process and the art of scientific communication.

**Text Book**

<b>Title</b>	Molecular Biology of the Gene
<b>Author(s)</b>	James Watson et al.
<b>Edition</b>	7th Edition
<b>Short Name</b>	Ref # 1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Bioinformatics and Functional Genomics	Jonathan Pevsner	2nd Edition	

**Instructor**

Name	<b>Dr. Amjad Mahasneh</b>
Office Location	N4 L0
Office Hours	Sun : 11:00 - 12:00 Mon : 10:00 - 12:00 Tue : 11:00 - 12:00 Wed : 10:00 - 12:00
Email	amjada@just.edu.jo

<b>Class Schedule &amp; Room</b>
Section 1: Lecture Time: Sun : 12:30 - 15:30 Room: LAB

<b>Tentative List of Topics Covered</b>		
<b>Weeks</b>	<b>Topic</b>	<b>References</b>
Weeks 1, 2	DNA and RNA structure	<b>Chapter 4&amp; 5</b> From <b>Ref # 1</b>
Weeks 3, 4	Techniques of Molecular Biology + Paper Presentation	<b>Chapter 7</b> From <b>Ref # 1</b>
Weeks 5, 6	Regulation of Gene Expression in Bacteria + Paper Presentation	<b>Chapter 18</b> From <b>Ref # 1</b>
Weeks 7, 8	Regulation of Gene Expression in Eukaryotes + Paper Presentation	<b>Chapter 19</b> From <b>Ref # 1</b>
Weeks 9, 10	Regulatory RNAs + Paper Presentation	<b>Chapter 20</b> From <b>Ref # 1</b>
Weeks 11, 12	DNA, RNA and Protein databases + Paper Presentation	<b>Chapter 2</b> From <b>Ref # 2</b>
Weeks 13, 14	Sequence Analysis of DNA, RNA and proteins + (BLAST and Multiple Sequence Alignment)+ Paper Presentation	<b>Chapter 4&amp; 6</b> From <b>Ref # 2</b>
Weeks 15, 16	Paper Presentations	

<b>Mapping of Course Outcomes to Program Student Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Demonstrate knowledge of the fundamental components of molecular biology and their characteristics [1A]	20%	
Demonstrate knowledge of molecular experimental procedures used to derive scientific knowledge, the advantages and limitations of experimental techniques, and develop the ability to interpret data derived from experiments [1D]	25%	
Demonstrate knowledge of gene regulation in prokaryotes and eukaryotes and apply this knowledge to the understanding of cell functioning and its regulation. [1A]	25%	
Demonstrate the ability to read and understand scientific literature in the field of molecular biology and integrate knowledge gained in the course in critical evaluation of this literature [1B]	20%	
Demonstrate knowledge of DNA and RNA data bases and sequence analysis using different tools [1A]	10%	

Relationship to Program Student Outcomes (Out of 100%)					
A	B	C	D	E	F
55	20		25		

Evaluation	
Assessment Tool	Weight
Midterm Exam	30%
Course work	20%
Final exam	50%

Policy	
Class Attendance	Your class attendance is mandatory. Absences in excess of 20% of the total lecture hours will result in your being dropped from the course with a failing grade.
Makeup Exams	Make-up exam appeals should be filed within one week of the missed exam.
Cell Phone Usage	Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed.
Cheating	Unethical conduct, including cheating during examinations, will result in punishment by the university administration.

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