

## Course Syllabus

1	<b>Course title</b>	Graduation Project	
2	<b>Course number</b>	0304393	
3	<b>Credit hours</b>	2	
	<b>Contact hours (theory, practical)</b>	2	
4	<b>Prerequisites/corequisites</b>	Passing 100 credit hrs	
5	<b>Program title</b>	BSc	
6	<b>Program code</b>	04	
7	<b>Awarding institution</b>	University of Jordan	
8	<b>School</b>	Science	
9	<b>Department</b>	Biology	
10	<b>Course level</b>	4 <sup>th</sup> Year	
11	<b>Year of study and semester(s)</b>	First semester 2021/2022	
12	<b>Other department(s) involved in teaching the course</b>	None	
13	<b>Main teaching language</b>	English	
14	<b>Delivery method</b>	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	<b>Online platforms(s)</b>	<input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others...	
16	<b>Issuing/Revision Date</b>	28-2-2023	

### 17 Course Coordinator:

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### 18 Other instructors:

**Name: Prof. Dr. Samih Tamimi**

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**Name: Prof. Dr. Sawsan Attalah Oran**

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### 19 Course Description:

As stated in the approved study plan.

This course will give students the opportunity to apply the knowledge he/she gained from the program courses in one project. The instructor will teach the students how to use search engines to find scientific articles and the skills of scientific presentation. Then, the student will conduct a graduation project, in which he/she has three options: the student can do a research project in the lab, or a computer based-research project (bioinformatics or other software/databank-based analysis), or a literature review and comparative data analysis in a certain topic or technique(s) in any of the biological disciplines such as biochemistry, microbiology, molecular biology...etc. In all cases, the student needs to write a report and present his/her work at the end of the semester in front of classmates and the instructor. During the course, the students will be introduced to the basic concepts and the different topics of Biorisk Management.

## 20 Course aims and outcomes:

### A- Aims:

1. To have the knowledge about the biological hazards that could be a threat to the health of the human, safety of the environment, risk of dealing with experimental animals and the guidelines and measures needed to eliminate their risks.
2. To give the students an opportunity to perform a research project within the field of biological sciences under supervision according to an individual study plan, to summarize the results in a research report and present the results of the project.

### B- Students Learning Outcomes (SLOs):

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

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

1. Demonstrate understanding of ethics, safety and biorisk when conducting laboratory research in biology, including dealing with experimental animals, biorisk groups (biosafety levels) and the potential of some agents to cause disease, and guidelines for handling and safety measures required to mitigate the biorisk
2. Gaining skills in conducting research in biology (under supervision)
3. Demonstrating skills in maintaining appropriate records of the experiments.
4. Gaining skills in scientific writing, including reviewing the scientific literature and preparing a research report or paper.
5. Demonstrating skills in preparing, presenting, and discussing the research findings.

SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)
SLOs of the course						
1	x				x	
2	x	x	x			x
3	x	x				
4				x		
5				x		

## 21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction						
	1.2	Choosing the project						
	1.3	Project Planning						
2	2.1	Research skills /Experimental design						
	2.2	Research skills /Experimental design						
	2.3	Literature review						
3	3.1	Safety in the lab and Biorisk Management						
	3.2	Safety in the lab and Biorisk Management						
	3.3	Safety in the lab and Biorisk Management						
4	4.1	Conducting research project						
	4.2	Conducting research project						
	4.3	Conducting research project						
5	5.1	Conducting research project						
	5.2	Conducting research project						
	5.3	Conducting research project						

6	6.1	Conducting research project						
	6.2	Conducting research project						
	6.3	Conducting research project						
7	7.1	Conducting research project						
	7.2	Conducting research project						
	7.3	Conducting research project						
8	8.1	Conducting research project						
	8.2	Conducting research project						
	8.3	Conducting research project						
9	9.1	Conducting research project						
	9.2	Conducting research project						
	9.3	Conducting research project						
10	10.1	Conducting research project						
	10.2	Conducting research project						
	10.3	Conducting research project						
11	11.1	Conducting research project						
	11.2	Conducting research project						

	11.3	Conducting research project						
12	12.1	Conducting research project						
	12.2	Conducting research project						
	12.3	Conducting research project						
13	13.1	Result interpretation and Scientific writing skills						
	13.2	Result interpretation and Scientific writing skills						
	13.3	Result interpretation and Scientific writing skills						
14	14.1	Result interpretation and Scientific writing skills						
	14.2	Result interpretation and Scientific writing skills						
	14.3	Result interpretation and Scientific writing skills						
15	15.1	Oral presentation						
	15.2	Oral presentation						
	15.3	Oral presentation						

## 22 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Biosafety in the lab, conduct, discipline, participation	20		1, 2	1-3	
Overall research potential	30		2	4-12	
Project report and oral presentation	50		3, 4	13-15	

## 23 Course Requirements

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

## 24 Course Policies:

- A- Attendance policies:
- B- Absences from exams and submitting assignments on time:
- C- Health and safety procedures:
- D- Honesty policy regarding cheating, plagiarism, misbehavior:
- E- Grading policy:
- F- Available university services that support achievement in the course:

## 25 References:

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

Introduction to Scientific Research Project.2010. Graham Basten, Ventus publishing, ISBN 978 87 7681 674-2

B- Recommended books, materials and media:

Ambrose, H.W. 2007. A Handbook of Biological Investigation. Book Renter, Inc.

McMillan, V.E. 2011. Writing Papers in the Biological Sciences. Bedford/St. Martin's. 256pp.

Biorisk Management Curriculum Development – Academic Track – Jordan. Content compiled by the University of Connecticut

### 26 Additional information:

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Name of Course Coordinator: Dr. Mohammad Abu Baker---Signature: ----- Date: 28.2.2023-----
Head of Curriculum Committee/Department: ----- Signature: -----
Head of Department: ----- Signature: -----
Head of Curriculum Committee/Faculty: ----- Signature: -----
Dean: ----- Signature: -----