

# University of Mosul



## College of Science

*First Cycle – Bachelor's degree (B.Sc.) – Biology*

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### 1. **Mission & Vision Statement**

#### *Vision Statement*

**For the department to be a pioneer in the field of biology sciences and to be distinguished at the local, regional and global levels, with a focus on education, training, services, applied research and community service.**

#### *Mission Statement*

**Preparing qualified graduates with knowledge and creativity in the field of biology, who are able to interact with the requirements of the age and technology, and contribute to building Iraqi society on sound scientific and ethical foundations.**

## 2. Program Specification

Programme code:	BSc-BIO	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

**Preparing qualified graduates with knowledge and creativity in the field of biology, who are able to interact with the requirements of the age and technology, and contribute to building Iraqi society on sound scientific and ethical foundations.**

Level 1 exposes students to the fundamentals of Biology, suitable for progression to all programmes within the biology programme group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. The University Biology graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the complexity of life forms from molecules, through organisms, both plants and animals, to populations to ensure the breadth of knowledge expected of a graduate with a biology degree. This allows students to develop their own wide-ranging interests in organismal biology. Decisions on what to study are made with input from personal tutors.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Levels 2, 3 and 4. At Level 4 all students carry out an independent research project, which may be a xx credit library or data analysis project, or a xx credit field or laboratory based project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

### **3. Program Objectives**

1. Providing the graduate with the necessary scientific knowledge in biology, which aims to deepen understanding of the methodology of analysis, criticism and scientific research, and to use these skills to study and exploit natural resources.
2. Empowering the graduate with practical and research skills that qualify him to excel and succeed in his practical life, and to be able to enroll in distinguished postgraduate programs.
3. Enabling the student to train and gain practical experience on a wide range of modern technologies and by using advanced scientific equipment in the various disciplines of biology.
4. Increasing awareness of biology among the general public (society) and its role in advancing national development and production.
5. Developing the student's skills to use modern research sources to enable him to build the necessary scientific skills such as scientific writing skill, debate skill, constructive criticism, and scientific communication.
6. Developing the department to be a center of excellence for biology sciences research and postgraduate studies.
7. Preparing students to occupy jobs in the industrial sector, the government sector, and in the fields of biology work, whether professional, research, or academic.

### **4. Student Learning Outcomes**

Students with a Bachelor's degree in biology are expected to have acquired the following skills:

- 1 . Acquire basic concepts in biology sciences and distinguish types of plants , animals , bacteria , viruses and fungi using laboratory and analytical techniques.
- 2 . Using applied skills and laboratory and field techniques to analyze and interpret data, evaluate wealth, and find solutions to geological and environmental problems, taking into account the requirements of public safety in the laboratory and field.
3. Understanding ethical and professional responsibilities and realizing the economic, environmental, societal and global implications of technical and scientific solutions to biological and environmental problems.
- 4 . Ability to communicate effectively and work as a team.

## 5. Academic Staff

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## 6. Credits, Grading and GPA

### **Credits**

Mosul University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

### **Grading**

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

Group	Grade	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	FX – Fail	(45-49)	More work required but credit awarded
	F – Fail	(0-44)	Considerable amount of work required
Note:			

### **Calculation of the Cumulative Grade Point Average (CGPA)**

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [ (1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots ] / 24$$

## 7. Curriculum/Modules

### Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio-1101	General Zoology	108	92	200	8.00	C	
Bio-1102	Analytical Chemistry	108	92	200	8.00	C	
Sci-101	General Mathematics	33	17	50	2.00	B	
Bio-1103	Biophysics	108	92	200	8.00	c	
UOM-104	Human Rights and Democracy	33	17	50	2.00	B	
UOM-101	Arabic Language	33	17	50	2.00	B	

### Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio-1204	General Botany	108	92	200	8.00	C	
Bio-1205	Organic Chemistry	108	92	200	8.00	C	
Bio-1206	Biostatistics	63	47	110	5.00	c	
Bio-1207	Safety and bioscurity	63	52	115	4.00	c	
UOM-103	Computer Science	63	12	75	3.00	B	
UOM-102	English Language	45	5	50	2.00	B	



**Semester 3 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio-2308	Entomology I	79	71	150	6.00	C	
Bio-2309	Plant Anatomy	79	71	150	6.00	C	
Bio-23010	Invertebrates	79	71	150	6.00	C	
Bio-23011	Biochemistry I	78	47	125	5.00	C	
Bio-23012	Microbiology I	78	47	125	5.00	C	
UOM-105	Crimes of the Baath party	33	17	50	2.00	B	

**Semester 4 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio-24113	Entomology II	78	72	150	6.00	C	Bio-2308
Bio-24114	Plant Taxonomy	78	72	150	6.00	C	Bio-2309
Bio-24115	Parasitology	78	72	150	6.00	C	Bio-23010
Bio-24116	Biochemistry II	78	22	100	4.00	C	Bio-23011
Bio-24117	Microbiology II	63	37	100	4.00	C	Bio-23012
Bio-24018	Plant Groups	63	37	100	4.00	C	

**Semester 5 Five/BIOLOGY | 30 ECTS | 1 ECTS = 25 hrs Five/BIOLOGY**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio1-35019	Cell Biology	79	71	150	6.00	C	
Bio1-35020	Ecology	78	47	125	5.00	C	
Bio1-35021	Biotechnology	78	47	125	5.00	C	
Bio1-35022	Mycology I	79	71	150	6.00	C	
<b>Bio1-35023-L</b> <b>Bio1-35023-A</b>	Elective (Laboratory analysis + Applied and Economic Entomology)	79	71	150	6.00	C	
Bio1-35024	Research Methodology	33	17	50	2.00	C	

**Semester 6 Six/BIOLOGY | 30 ECTS | 1 ECTS = 25 hrs Six/BIOLOGY**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio1-36025	Plant Pathology	78	72	150	6.00	C	
Bio1-36026	Histology	78	72	150	6.00	C	
<b>Bio1-36027-D</b> <b>Bio1-36027-E</b>	Elective (Diagnostic parasite + Endocrinology)	78	72	150	6.00	C	
Bio1-36128	Pollution	64	36	100	4.00	C	Bio1-35020
Bio1-36129	Genetics	78	47	125	5.00	C	Bio1-35019
Bio1-36030	Allelopathy	63	12	75	3.00	C	

**Semester 5 Five/Microbiology| 30 ECTS | 1 ECTS = 25 hrs five/Microbiology**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio2-35019	Soil Microbiology	78	47	125	5.00	C	
<b>Bio2-35020-L</b> <b>Bio2-35020-C</b>	Elective (Laboratory Analysis + Diagnostic parasite)	79	71	150	6.00	C	
Bio2-35021	Histology	79	71	150	6.00	C	
Bio2-35022	Ecology	78	47	125	5.00	C	
Bio2-35023	Cell Biology	79	71	150	6.00	C	
Bio2-35024	Research Methodology	33	17	50	2.00	C	

**Semester 6 Six/Microbiology| 30 ECTS | 1 ECTS = 25 hrs Six/Microbiology**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio2-36025	Water Microbiology	78	72	150	6.00	C	
Bio2-36026	Bacterial Physiology	78	72	150	6.00	C	
Bio2-36027	Animal Physiology	78	72	150	6.00	C	
Bio2-36128	Pollution	64	36	100	4.00	C	Bio2-35022
Bio2-36129	Genetics	63	12	75	3.00	C	Bio2-35023
<b>Bio2-36030-A</b> <b>Bio2-36030-C</b>	Elective (Antibiotics +Classification of Bacterial groups)	78	47	125	5.00	C	

**Semester 7 Seven/BIOLOGY| 30 ECTS | 1 ECTS = 25 hrs Seven /BIOLOGY**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio1-47031	Animal Physiology 1	79	71	150	6.00	C	
Bio1-47032	Plant Physiology 1	79	71	150	6.00	C	
Bio1-47033	Embryology	79	71	150	6.00	C	
Bio1-47034	Quantitative Genetics	79	71	150	6.00	C	
Bio1-47035	Molecular biology	78	22	100	4.00	C	
Bio1-47036	Research Project	33	17	50	2.00	C	

**Semester 8 Eight/BIOLOGY| 30 ECTS | 1 ECTS = 25 hrs Eight /BIOLOGY**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio1-48137	Animal Physiology 2	79	71	150	6.00	C	Bio1-47031
Bio1-48138	Plant Physiology 2	79	71	150	6.00	C	Bio1-47032
Bio1-48039	Comparative Anatomy	79	71	150	6.00	C	
Bio1-48040	Biodiversity	79	71	150	6.00	C	
Bio1-48041	Immunology	78	22	100	4.00	C	
Bio1-48142	Research Project	33	17	50	2.00	C	Bio1-47036

**Semester 7 Seven/MICROBIOLOGY| 30 ECTS | 1 ECTS = 25 hrs Seven /Microbiology**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio2-47031	Immunology	79	71	150	6.00	C	
Bio2-47032	pathogenic Bacteriology	79	71	150	6.00	C	
Bio2-47033	Food Microbiology	79	71	150	6.00	C	
Bio2-47034	Mycology	79	71	150	6.00	C	
Bio2-47035	Enzymology	78	22	100	4.00	C	
Bio2-47036	Research Project	33	17	50	2.00	C	

**Semester 8 Eight/MICROBIOLOGY | 30 ECTS | 1 ECTS = 25 hrs Eight/Microbiology**

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
Bio2-48037	Microbial Genetics	79	71	150	6.00	C	
Bio2-48038	Virology	79	71	150	6.00	C	
Bio2-48139	Industrial Microbiology	79	71	150	6.00	C	Bio2-47033
Bio2-48140	Fungal Taxonomy	79	71	150	6.00	C	Bio2-47034
Bio2-48041	Molecular biology	78	22	100	4.00	C	
Bio2-48142	Research Project	33	17	50	2.00	C	Bio2-47036

## **8. Contact**

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