



Program Catalogue 2025 – 2026

وصف البرنامج الدراسي – مسار بولونيا

Ministry of Higher Education and

Scientific Research - Iraq

University of Babylon

College of Science for women

First Cycle - Bachelor's Degree (B.Sc.)- Bologna Process

Department of Biology



Contents

Program Catalogue 2025 – 2026	I
Introduction	II
❖ Mission & Vision Statement	II
• Our Mission.....	III
• Our Vision	III
• Our Strategic Goals.....	III
❖ Programme Specification	III
➤ Educational Aims of Programme	IV
➤ Learning Outcomes: Cognitive Skills	V
➤ Learning Outcomes: Knowledge & Understanding	V
➤ Learning Outcomes: Subject Specific	VI
➤ Learning Outcomes: Transferable Skills	VI
❖ Credits, Grading and GPA	VII
❖ Academic Staff.....	VIII
➤ Modules.....	IX

Introduction:

The Department of Life Sciences represents an academic sphere pulsating with knowledge, where theoretical depth converges with applied vision to explore the mysteries of living organisms at molecular, cellular, and ecological levels. The academic program is designed to embody a modern educational philosophy grounded in research and discovery, offering students the opportunity to engage in a scientific journey that cultivates critical thinking and enhances skills of analysis and interpretation. The program's structure harmonizes scientific flexibility with methodological rigor, keeping pace with global trends in the life sciences while establishing a solid knowledge base capable of addressing environmental, health, and agricultural challenges. It further aspires to shape a creative scientific generation that balances research originality with the requirements of technological advancement. Through openness to societal issues and the application of science in the service of humanity and the environment, the department seeks to be locally pioneering and regionally influential in shaping the biological future of knowledge.

❖ Mission & Vision Statement

In line with the University's mission, the academic vision of the School of the Biological Sciences is the pursuit of education, learning and research at the highest international levels of excellence.

Our goal is to continue to deliver research and teaching at the highest levels, working in innovative ways to achieve ongoing excellence.

The research and teaching carried out in the School of the Biological Sciences is diverse and covers animal, human, plant and microbial science from the atomic, molecular and cellular levels through to tissues, organs, whole organisms, populations, ecosystems, biodiversity, and human behaviour. The research has impacts on health and disease across species, agriculture, conservation and the environment as well as on biotechnology.

- **Our Mission**

To serve the communities of our world, nation, country, and university by advancing understanding of living organisms and their interactions with the environment through research, to provide high-quality biology education with an emphasis on experiential learning and problem-solving, and to build public understanding of the living world through educational outreach activities for learners of all ages.

- **Our Vision**

The Department of Biological Sciences will be a leader in acquiring fundamental knowledge of the living world that will advance the health of the planet, including humans. We will fully integrate instruction and research so that all students not only learn but also, through their learning, actively contribute to our understanding of life.

- **Our Strategic Goals**

- ✓ Advance our research efforts in emerging fields of the biological sciences and develop nationally recognized learning centers for undergraduate and graduate curricula
- ✓ Increase the recruitment of and support for innovative and outstanding faculty who through research and teaching will develop the scientists, health professionals, government professionals, and mentors of the future
- ✓ Foster an exciting environment where teaching, research, and service will stimulate our students to serve as leaders of the people of this country.
- ✓ Enrich our regional environment with the development of scientific programs to include opportunities for participation of our local communities.

❖ Programme Specification

Programme Code :	BIO	ECTS :	240
Durations:	4 levels & 8 Semesters	Method and attendance:	Full time

The programme is delivered in four stages, each of which comprises one year of full-time study during which the student must follow courses to the value of four-six units (one unit is roughly equivalent to 25 credits). The curriculum is based around a core of mandatory units running through all four stages providing a broad base of biology.

Level One comprises a selection of core, basic and support courses and seeks to provide a broadly based introduction to the subject. These courses consider major themes of Zoology concepts, Botany, and Analytic and Organic Chemistry, along with Biophysics, Biostatistics, Computer Science and Safety and biosecurity. **In Level Two**, students take more core, basic and support biological courses including Entomology, Plant Anatomy and Classification, Invertebrate and Parasitology, Biochemistry and Microbiology. These take the students beyond the basic courses in stage one and these courses enable students to specialize or maintain a broadly based programme. These courses also provide a basis for research-led specialist options in stage three. **In Level Three**, students take another core biology courses including Cell Biology and Genetics, Ecology and Pollution, Animal histology and physiology, Immunology, Plant physiology, Microbial Physiology and Research Methodology. Most of these courses closely reflect the research interests of members of staff who are all specialists in their fields. **In Level Four**, students take another core biology course like Molecular Biology, Pathogenic Bacteriology, Mycology, Comparative Anatomy, Microbial Genetics, Virology, Industrial and Food Microbiology as well as they will choose 2 courses out of the organismal and molecular options available. Students also complete an individual research project, which provides training in a specialised research area and also in generic skills such as independent working, literature searching, report writing, use of word processing, graphics and statistics. Options are selected in consultation with the student's advisor.

➤ Educational Aims of Programme

The BSc Honours Biological Sciences Programme is designed to give graduates in-depth knowledge related to the diversity and complexity of living organisms and their interactions. This course allows students to study life (bacterial, fungal, plant, animal) at the molecular level through to whole populations and ecosystems.

- 1- Demonstrate an extensive knowledge and understanding of concepts and theories relating to the biological sciences from the molecular and cellular aspects through to the whole-organism
- 2- Demonstrate a range of practical laboratory skills with respect to the investigation and manipulation of biological material and physical, chemical and biological measurements relevant to the biological sciences, and the application of these skills in a research project setting.

- 3- Demonstrate proficiency in the collation, quantitative analysis and interpretation of experimental data, and the ability to problem-solve.
- 4- Demonstrate an ability to communicate and apply knowledge on the biological sciences.
- 5- Demonstrate proficiency in the use of computers for data management and presentation.

The programme is underpinned by an active research environment and aims to enable all students to develop comprehensive subject-specific knowledge with practical and transferable skills in the core areas of Zoology, Genetics, Cell Biology, Biochemistry and Microbiology whilst encouraging creative thinking and innovation. On completion of the programme, successful students will have developed the knowledge and expertise required to pursue a research or other professional career in Biological Sciences.

➤ **Learning Outcomes: Cognitive Skills**

On the completion of this course successful students will be able to:

- 1- Analyze, synthesize and critically evaluate scientific literature.
- 2- Apply subject knowledge and understanding to generate hypotheses to address familiar and unfamiliar problems.
- 3- Demonstrate the ability to evaluate critically the appropriateness of different approaches to solving problems and appreciate the limitations of current hypotheses.
- 4- Recognize the importance of academic and research integrity and ethical issues of investigations.

❖ **Teaching/Learning Methods and Strategies**

Outcomes are achieved through lectures, practical classes, discussions, field work, tutorials, group work, final year project work, online learning via the University VLE and independent study.

❖ **Methods of Assessment**

Students are assessed through class tests, unseen written examinations, practical reports, oral presentations, essays, posters, case studies, data analysis and a project thesis.

➤ **Learning Outcomes: Knowledge & Understanding**

On the completion of this course successful students will be able to:

- 1- Demonstrate a broad appreciation and understanding of the major theories and concepts in biological sciences.
- 2- Demonstrate a knowledge and understanding of the similarities and diversity of organisms and the processes which underpin life on earth.
- 3- Demonstrate a knowledge and understanding of biological sciences from the molecular to the whole organism, based on the recurring theme of evolution and natural selection.
- 4- Exhibit a critical awareness of the molecular basis of genetics and molecular biology.

❖ Teaching/Learning Methods and Strategies

Knowledge-based subject-specific learning and teaching is provided through lectures, module practical classes, discussions, fieldwork, tutorials, group work, final-year project work, and online learning via the University's independent study.

❖ Methods of Assessment

Students are assessed through unseen written examinations, class tests, practical reports, oral presentations, essays, posters, and project research.

➤ Learning Outcomes: **Subject Specific**

On the completion of this course successful students will be able to:

- 1- Comprehend the scientific literature relating to Biological Sciences and integrate information there from to address problems, and formulate and test hypotheses.
- 2- Be able to devise, evaluate and carry out experimental work in a biological sciences laboratory and/or field site.
- 3- Document and present data, using appropriate statistical analysis.
- 4- Comply with health and safety regulations and ethics procedures relevant to the specific project type and/or practical environment.
- 5- Be proficient in the use of IT for accessing databases and scientific literature, manipulating, processing and presenting data and written assignments.

❖ Teaching/Learning Methods and Strategies

Skills

in laboratory work and in the analysis and interpretation of data is developed incrementally beginning at stage 1 and 2 through to the final year research project. Students will follow safety protocols relating to practical work at all stages and will prepare risk assessments as part of their research project.

❖ Methods of Assessment

Students are assessed through written reports, direct observation in the laboratory (OSPE) or field, essays and honours project thesis. Students are referred to the primary literature in support of taught modules and prepare a project-oriented review. Practical reports, completion of practical skills portfolio. Completion of /compliance with Ethical procedures, COSHH and Risk Assessments.

➤ Learning Outcomes: **Transferable Skills**

On the completion of this course successful students will be able to:

- 1- Demonstrate an ability to communicate and apply knowledge of the biological sciences to peers and non-scientists using a range of media.

- 2- Exhibit the personal and intellectual skills necessary for the world of employment and lifelong learning including:
- intellectual independence,
 - self-motivation,
 - effective time management and planning,
 - an adaptable, flexible approach to learning
 - the ability to work as part of a team.
- 3- Demonstrate proficiency in the collation, quantitative analysis, graphical presentation, and interpretation of experimental data, and the ability to problem solve.
- 4- in laboratory work and in the analysis and interpretation of data is developed incrementally beginning at stage 1 and 2 through to the final year research project. Students will follow safety protocols relating to practical work at all stages and will prepare risk assessments as part of their research project.

❖ Credits, Grading and GPA

Babylon 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:

GRADING SCHEME مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

❖ Academic Staff

Biology department staffing details

The head of the department is occupied by **(Asst. Prof. Dr. Ekhlas Al Shareefi)**

Academic Staff Information

Notes	Subspecialty	General Specialty	Name	Scientific title
	Immunology	Ph.D. in Biology	Dr. Abdulnabi Jwaid	Professor
	Parasitology - Parasitology	Ph.D. in Biology	Dr. Ahmed Khudair	Professor
	Zoology - Histology	Ph.D. in Biology	Dr. Rafah Hadi	Professor
	Zoology - Physiology	Ph.D. in Biology	Dr. Dakhil Ghani	Professor
	Microbiology - Mycology	Ph.D. in Biology	Dr. Kawther Mohammed Ali	Professor
	Molecular and cytogenetic	Ph.D. in Biology	Dr. Ali Hussain	Professor
	Botany	Ph.D. in Biology	Dr. Hussain Jabr	Professor
	Parasitology - Parasitology	Ph.D. in Biology	Dr. Raid Abbas	Professor
	Genetic Microbiology	Ph.D. in Biology	Dr. Hasaneen Khaleel	Professor
Head of Department	Zoology - Entomology	Ph.D. in Biology	Dr. Ekhlas Mohammed Ali	Asst. Prof.
coordinator	Zoology - Physiology	Ph.D. in Biology	Dr. Hawraa Sabah	Asst. Prof.
Postgraduate coordinator	Immunology	Ph.D. in Biology	Dr. Zeena Shaker	Asst. Prof.
	Microbial Ecology	Ph.D. in Agricultural sciences	Dr. Mohammed Ibraheem	Professor
	Plant Anatomy & Classification	Ph.D. in Biology	Dr. Huda Jasim	Professor
	Pathogenic Bacteria	Ph.D. in Biology	Dr. Oruba Kadoof	Professor
	Plant Physiology	Ph.D. in Biology	Dr. Salah Ali Eidan	Asst. Prof.
Genetic engineering	Biotechnology	Ph.D. in Biology	Dr. Israa A. Ibraheem	Professor
	Microbiology - Antigens	Ph.D. in Biology	Dr. Fatima Moain	Professor
Dean of the College	Microbiology	Ph.D. in Biology	Dr. Abeer Fawzi	Professor
	Zoology - Histology	Ph.D. in Biology	Dr. Manar Mohammed Hassan	Professor
Part time - PhD student	Cytology	M.Sc. in Biology	Shaimaa Ahmed	Professor
	Zoology - Physiology	Ph.D. in Biology	Dr. Shaimaa Obaid	Professor
Part time - PhD student	Microbiology	M.Sc. in Biology	Hawraa Wahab	Professor
Part time - PhD student	Immunology	M.Sc. in Biology	Ali Malik	Professor
	Microbiology - Virology	Ph.D. in Biology	Dr. Zainab Abdulnabi	Asst. Prof.
	Aquatic ecology	Ph.D. in Biology	Dr. Nadia Mahmood	Asst. Prof.
	Microbiology - Mycology	M.Sc. in Biology	Sabreen Abdulameer	Professor
	Microbiology	Ph.D. in Biology	Dr. Tasaheel Hamid	Asst. Prof.
	Biotechnology	Ph.D. in Biology	Dr. Ishraq Abdulameer	Asst. Prof.
	Industrial Microbiology	Ph.D. in Biology	Dr. Nesreen Kadhim	Asst. Prof.
	Nano-Biotechnology	Ph.D. in Biology	Dr. Sama Jawad	Asst. Prof.
Scholarship - PhD student	Microbiology	Ph.D. in Biology	Dr. Amal Raqib	Asst. Prof.
	Zoology - Entomology	M.Sc. in Biology	Nebras Mhammed Sahi	Asst. Prof.
	Microbiology	Ph.D. in Biology	Dr. Hawraa Jawad	Asst. Prof.
	Field crops	MSc. In Agricultural sciences	Ahmed Habeeb	Asst. Prof.
	Ecology	M.Sc. in Biology	Ashwaq Faleh	Lecturer
	Ecological Pollution	M.Sc. in Biology	Zaynab Hayder	Asst. Lecturer
	Ecological Pollution	M.Sc. in Biology	Worood Hamza	Asst. Lecturer
Part time - PhD student	Microbiology	M.Sc. in Biology	Sheerin Sabah	Asst. Lecturer
	Private International Law	M.Sc. in special law	Kareem Mohammed Kadhim	Lecturer
	IT	M.Sc. in Computer	Wojdan Noaman	Asst. Lecturer

❖ Calculation of the Cumulative Grade Point Average (CGPA)

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 a4-year B.Sc. degrees:

CGPA: (1'tmodule score x ECTS) + (2'd module score x ECTS) + /1240

➤ Modules

Level	Semester	No.1	Module Code	Module Name in English	اسم المادة الدراسية	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code	
						hr/sem	hr/sem	hr/sem				
UGI	One	1	BIO1101	General Zoology	علم الحيوان العام	79	71	150	6.00	C		
		2	BIO1102	Analytical Chemistry	كيمياء تحليلية	64	61	125	5.00	B		
		3	BIO1103	General Mathematics	الرياضيات العامة	34	66	100	4.00	B		
		4	BIO1104	Biophysics	فيزياء حيوية	64	61	125	5.00	B		
		5	UOB1105	Human Rights and Democracy	حقوق انسان وديمقراطية	77	48	125	5.00	S		
		6	UOB1106	Arabic Language	اللغة العربية	62	63	125	5.00	S		
							380	370	750	30.00		
	Semester	No.2	Module Code	Module Name in English	اسم المادة الدراسية	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code	
						hr/sem	hr/sem	hr/sem				
	Two	1	BIO1207	General Botany	علم النبات العام	79	46	125	5.00	C		
		2	BIO1218	Organic Chemistry	كيمياء عضوية	62	63	125	5.00	B	BIO1102	
		3	BIO1209	Invertebrates	علم اللافقريات	79	46	125	5.00	C		
4		UOB12010	Safety and bioscurity	السلامة والامن البيولوجي	62	88	150	6.00	S			
5		UOB12011	Computer Science I	علم الحاسوب I	62	63	125	5.00	S			
6		UOB12012	English Language I	اللغة الانكليزية I	62	38	100	4.00	S			
						406	344	750	30.00			

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code	
						hr/sem	hr/sem	hr/sem				
UGII	Three	1	BIO2311	Entomology I	علم الحشرات I	92	58	150	6.00	C		
		2	BIO2312	Plant Anatomy	علم تشريح تنيك	92	58	150	6.00	C		
		3	BIO2303	Invertebrates	علم اللافقريات	92	33	125	5.00	C		
		4	BIO2314	Microbiology I	علم الاحياء المجهرية I	92	33	125	5.00	C		
		5	BIO2305	Plant Groups	مجموع نباتية	77	23	100	4.00	C		
		6		English Language II	اللغة الانكليزية II	32	18	50	2.00	S		
		7		Crimes of the defunct Baath	جرم حزب البعث البند	32	18	50	2.00	S		
							509	241	750	30.00		
	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code	
						hr/sem	hr/sem	hr/sem				
	Four	1	BIO2401	Entomology II	علم الحشرات II	92	33	125	5.00	C	BIO2311	
		2	BIO2402	Plant Taxonomy	علم تصنيف تنيك	92	33	125	5.00	C	BIO2312	
3		BIO2403	Biochemistry II	كيمياء حيوية II	92	33	125	5.00	B			
4		BIO2404	Microbiology II	علم الاحياء المجهرية II	92	33	125	5.00	C	BIO2314		
5		BIO2405	Parasitology	علم الطفيليات	92	33	125	5.00	C			
6			Computer Science II	علم الحاسوب II	62	13	75	3.00	S			
7			Arabic Language	اللغة العربية II	32	18	50	2.00	S			
						554	196	750	30.00			

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	ECTS	Module Type	
Third Level	Five	1	BIO3501	Animal Physiology	الفسلجة الحيوانية	5.00	C	
		2	BIO3502	Plant Physiology	الفسلجة النباتية	4.00	C	
		3	BIO3513	Cytology	علم الخلية	4.00	C	
		4	BIO3514	Ecology	علم البيئة	5.00	C	
		5	BIO3505	Water & soil microbiology	الاحياء المجهرية للتربة والمياه	4.00	C	
		6	BIO3506	Biodiversity	التنوع الحيائي	4.00	C	
		7	BIO3507	Pathogenic analysis	تحليلات مرضية	4.00	C	
							30.00	
	Six	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	ECTS	Module Type
			1	BIO3601	Histology	الانسجة الحيوانية	5.00	C
			2	BIO3602	Immunology	علم المناعة	5.00	C
			3	BIO3603	Genetics	علم الوراثة	5.00	C
			4	BIO3604	Pollution	التلوث	5.00	C
			5	BIO3605	Physiology of Microbiology	فسلجة الاحياء المجهرية	4.00	C
			6	BIO3606	Hematology	علم الدم	4.00	C
7			BIO3607	Research Methodology	منهجية البحث	2.00	B	
					30.00			

