

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



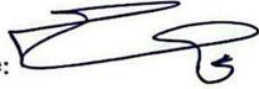
Academic Program and Course Description

2025-2024

Academic Program Description Form

University Name: Al-Furat Al-Awsat Technical University
Faculty/Institute: Al-Mussaib Technical College
Scientific Department: Biological Control Technologies
Academic or Professional Program Name: Bachelor of Biological control Technologies
Final Certificate Name: Bachelor of Technology in Biological control
Academic System: semester
File Completion Date: 9/20/2024

Signature:



Head of Department Name:

D. Kadhim Zghir Khadir

Date: 30/9/2024

Signature:



Scientific Associate Name:

D. Nabeel Hameed A. Majeed

Date: 30/9/2024

أ. د. نبييل حميد عبد المحيد
معاون العميد للشؤون العلمية
و الدراسات العليا
30/9

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

D. Haider R. Alhamadani

Date:

Signature:



وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية - المسيب
شعبة ضمان الجودة و الأداء الجامعي



Approval of the Dean

1. Program Vision

The Department of Biological Control Technologies, through existing educational programs, aspires to create a technical educational system based on the requirements and needs of society and service facilities related to the specialty, in a way that serves scientific and technical development in the field of biological control and integrated management to control agricultural pests and reduce the use of chemical substances in agricultural production.

2. Program Mission

Working to achieve the department's goals and aspirations by creating an appropriate educational environment and providing all material requirements and the humanity needed to achieve this. And work to graduate groups capable of serving society by providing scientific competence and skill energies in the field of biological control against pests and pathogens that attack plants through technical education in accordance with internationally approved quality standards.

3. Program Objectives

Preparing scientific craft to lead the work of the Ministry of Agriculture in the aspects and skills of biological control in important agricultural and economic pest sciences, such as insect, bacterial, fungal, viral, and nematode, in addition to supplying some government institutions and the private sector with technical craft, in addition to these craft carrying out the following work.

Establishing apiaries for bees
2. Studying insect and bacterial pests in fields and greenhouses
3. Establishing consulting offices to provide farm owners and the private sector with expertise and consultations
4. Providing expertise to farmers in methods of adding pesticides, their quantities, the importance of organic agriculture, and conducting explanatory experiments regarding the types of pesticides introduced into the country
5. -Establish integrated management programs for economic pests to reduce the harm of pesticides.
6. Understanding biological control programs
7. Diagnosing insects, parasites, predators, and non-insect pests
8. Identifying pests of horticultural crops (fruits and vegetables)
9. Diagnosing and examining fungal, viral, and fungal diseases

4. Program Accreditation

none

5. Other external influences
none

6. Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	15	11%	Basic
	2	2		optional
College Requirements	10	19	17.2%	Basic
	7	6		optional
Department Requirements	29	76	71.72%	Basic
	27	28		optional
Summer Training	Month for each second and third years			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
Year 1 2023-2024	BIRE107	Microbiology	1	3
	BIRE108	Plant Protection	1	3
	BIRE109	Pesticides	1	3
	BIRE110	world of insects	2	3
	BIRE111	mycology	2	3
Year 2 2024-2025	BIRE 203	Biotechnology	1	3
	BIRE204	Classification of insects	2	3
	BIRE205	Economic insects	2	3
	BIRE206	Plant diseases	2	3
	BIRE207	Viral diseases	1	3

	BIRE208	Jungles and their control	1	3
	BIRE209	Beneficial insects	2	3
	BIRE210	Medical and veterinary insects	1	3
	BIRE211	Summer Internship (1)		
Year 3 2025-2026	BIRE303	Insects of field crops and stores	2	3
	BIRE304	Biological control/disease	2	3
	BIRE305	Physiology and anatomy of insects	2	3
	BIRE306	Insect ecology	2	3
	BIRE307	Biological control/insect	2	3
	BIRE308	Diseases of horticultural crops	2	3
	BIRE309	Bacterial diseases	1	3
	BIRE310	Diseases of field crops and stores	2	3
	BIRE311	Summer Internship (2)		
Year 4 2026-2027	BIRE404	Secondary metabolites	1	2
	BIRE405	Insect pheromones	1	2
	BIRE406	Integrated pest management	2	3
	BIRE407	Nematode	1	3
	BIRE408	Insects of horticultural crops	2	3
	BIRE409	Non-insect animal pests	2	3
	BIRE410	Seminars and project1	1	3
	BIRE411	Seminars and project2	1	3

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Preparing technical crafts regarding biological control in all its branches at the level of a technical bachelor's degree in all areas of biological control. 1- Classification of insects 2- Beneficial insects. 3- Animal, not insect, pests. 4- Bacterial diseases. 5- Classification of fungi. 6- Caecilian worms
Skills	
Learning Outcomes 2	1 - Developing the student's abilities in biological control. 2 - Increasing students' capabilities in preventive operations for field crops, vegetables, fruits, ornamental plants, and forests. 3 - Learning about integrated management technology. 4- Practicing work related to the process of control and plant protection after graduation, both in the public and private sectors, and how to manage private projects.
Learning Outcomes 3	
Ethics	
Learning Outcomes 4	1- Skills in using field control techniques 2- Mastering the use of computers in preventive operations, developing plans for combating, and developing statistical analysis programs for them 3- Skills in the fields of plant protection science techniques (fruits and vegetables), ornamentals, and forestry 4- Developing self-abilities in laboratory applications of academic subjects
Learning Outcomes 5	

9. Teaching and Learning Strategies

Lectures, laboratories, field applications, scientific films, summer training, wooden canopy, seminars, scientific trips.

10. Evaluation methods

Written tests, oral tests, pre- and post-tests, semester exams, final exams, daily calendar, laboratory practical tests, quarterly exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer
Professor	Biology	Microbiology		Staff	
Professor	Plant protection	Plant diseases		Staff	
Assistant Professor	Biology	Insects		Staff	
Assistant Professor	Biology	Microbiology		Staff	
Assistant Professor	Plant protection	Insects		Staff	
Assistant Professor	Plant protection	Insects		Staff	
Assistant Professor	Biology	plants		Staff	
Assistant Professor	Agricultural sciences	Biological control		Staff	
Assistant Professor	Plant protection	Plant diseases		Staff	
Assistant Professor	Agricultural sciences	Biological control techniques		Staff	
Assistant Professor	Biology	Molecular biology and biotechnology	Certified ministerial trainer in teaching methods courses for the integrated system	Staff	

Lecturer	Plant protection	Plant diseases			Staff	
Lecturer	Agricultural sciences	Biological control techniques			Staff	
Assistant Lecturer	Agricultural sciences	Biological control techniques			Staff	
Assistant Lecturer	Biology	Mycology			Staff	
Assistant Lecturer	Agricultural sciences	Multiplication and improvement techniques			Staff	

Professional Development

Mentoring new faculty members

- 1- The possibility of working in the private agricultural sector
- 2- The ability to open advisory offices and provide scientific advice to farmers in all areas of plant production
- 3- The ability to produce a specialized project
- 4- The possibility of working in consulting offices related to agricultural production

Professional development of faculty members

- 1- Holding courses, seminars, and workshops specific to their specialization and general ones, which include university service laws, student and employee discipline laws, and others.
- 2- Urging them to contribute to programs to develop teaching skills
- 3- Administrative progression for them to provide them with various job skills, such as participating in various committees, working in examination committees, and knowing the various administrative laws.
- 4- Providing them with the ability to deal with the private sector and various departments through establishing awareness programs in the specialty, as well as establishing social relations, which is the focus of joint cooperation between the educational institution and the various departments.

12. Acceptance Criterion

The rate and type of scientific branch of preparatory school, top students in agricultural institutes, and distinguished employees in state departments in agricultural specialties.

13. The most important sources of information about the program

1 Curriculum guide for Al-Mussaib Technical College - Department of Biological control technologies

14. Program Development Plan

- Providing academic support capabilities in organizing field visits.
- Providing an appropriate classroom environment that enables the teacher to diversify teaching strategies.
- Providing information technology in the campus library.
- Hosting experts from outside the college, or from the work environment for which they are preparing, to benefit from their expertise in developing the course according to the actual need of the labor market.

Program Skills Outline

				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
1/2023-2024	BIRE108	Plant protection	Basic	✓	✓		✓	✓			✓				✓
									✓		✓				
2/2024-2025	BIRE204	Classification of insects	Basic		✓			✓		✓		✓			✓
						✓									
3/2025-2026	BIRE309	Bacterial diseases	Basic		✓	✓			✓	✓		✓	✓		
												✓			
4L2026-2027	BIRE406	Integrated pest management	Basic								✓			✓	
													✓	✓	✓

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name: Biological control/ insect					
2. Course Code: BIRE307					
3. Semester / Year: Spring/third semester					
4. Description Preparation Date:10-3-2024					
5. Available Attendance Forms: theoretical (in person and electronic when necessary) + practical					
6. Number of Credit Hours (Total) / Number of Units (Total): 75 hours					
7. Course administrator's name (mention all, if more than one name)					
Name: Youssef Dakhil Rashid					
Email:					
8. Course Objectives					
Course Objectives		<p>The student identifies some of the most important parasites and predators that attack insect pests that infect plants, learns about methods of parasitism, and programs for breeding biological enemies and releasing them into agricultural fields to combat harmful insects, well as preserving them and monitoring them for their continued effectiveness.</p>			
9. Teaching and Learning Strategies					
Strategy	Theoretical and practical lectures, practical models, educational pictures and posters, insect models				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	1- Know the biological resistance of insects 2- Knows programs releasing, preserving	Insects and their relationship to the environment	Lecture laboratory	Written exam + self-exam (laboratory)
2	5		Natural resistance to insects	Lecture laboratory	Written exam + self-exam (laboratory)
3	5		Mechanisms used in biological resistance programs	Lecture laboratory	Written exam + self-exam (laboratory)

4	5	and monitoring v	Methods used	Lecture	Written exam + s
5	5	enemies	introduce biolog	laboratory	exam (laboratory
6	5	3- Knows the paras	Insect parasite	Lecture	Written exam + s
7	5	and its ways of living	their types	laboratory	exam (laboratory
8	5	4- Knows the preda	methods	Lecture	Written exam + s
9	5	and its ways of living	reproduction	laboratory	exam (laboratory
10	5	5- Studies the behav	Insect parasitoid	Lecture	Written exam + s
11	5	of parasitism a	biological	laboratory	exam (laboratory
12	5	predation	characteristics	Lecture	Written exam + s
13	5	6- Learns the role	parasitoid adul	laboratory	exam (laboratory
14	5	biological resistance	behavior of adul	Lecture	Written exam + s
15	5	insects	Insect predator	laboratory	exam (laboratory
16	5	7- Identify so	biological traits	Lecture	Written exam + s
17	5	parasites on insects	strategies	laboratory	exam (laboratory
18	5	8 - Identify some ins	Bacterial resista	Lecture	Written exam + s
19	5	predators	to insect pest	laboratory	exam (laboratory
20	5	9- Identify so	bacteria that ca	Lecture	Written exam + s
21	5	pathogens in insects	insect diseases	laboratory	exam (laboratory
22	5	10- Gain skill	Continuation	Lecture	Written exam + s
23	5	preparing a biologi	Bacterial resista	laboratory	exam (laboratory
24	5	control program for c	to pests - caecil	Lecture	Written exam + s
25	5	or a group of insect pe	- fungi that ca	laboratory	exam (laboratory
26	5	11- Gain skill	insect diseases	Lecture	Written exam + s
27	5	diagnosing some typ	Defense mechar	laboratory	exam (laboratory
28	5	of parasites on insects	in insects - exte	Lecture	Written exam + s
29	5	12- Gain skill	defense mechar	laboratory	exam (laboratory
30	5	diagnosing some typ	in insects - inte	Lecture	Written exam + s
31	5	of insect predators.	defense mechar	laboratory	exam (laboratory
32	5	13- Gain skill	Resistance of in	Lecture	Written exam + s
33	5	diagnosing some typ	parasites to	laboratory	exam (laboratory
34	5	of fungi or bacteria	defenses	Lecture	Written exam + s
35	5	insects.	Plant resistance	laboratory	exam (laboratory
36	5		pests - agricult	Lecture	Written exam + s
37	5		resistance - gene	laboratory	exam (laboratory
38	5		- pheromones	Lecture	Written exam + s
39	5		Biological cor	laboratory	exam (laboratory
40	5		to insects	Lecture	Written exam + s

11.Course Evaluation

Monthly exam and activity (daily exams + reports + attendance + extracurricular activities) and final exam

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book on Biological Control to Agricultural Pests by Dr. Ha Al-Zubaidi
Main references (sources)	Books on insects, integrated pest management, and o helpful resources
Recommended books and references (scientific journals, reports...)	Specialized scientific journals
Electronic References, Websites	https://www.youtube.com/education