

**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**

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

Description Preparation Date: 3/10/2024

File Completion Date: 3/20/2024



Signature:



Head of Department Name:

Dr. Hassan Hadi Alkayumi

Date:

Signature:

Scientific Associate Name:

Nabeel Hameed A. Majeed

Date:

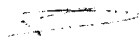
The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:



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

Year 3 2025-2026	BIRE208	Jungles and their control	1	3
	BIRE209	Beneficial insects	2	3
	BIRE210	Medical and veterinary insects	1	3
	BIRE211	Summer Internship (1)		
	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
Year 4 2026-2027	BIRE310	Diseases of field crops and stores	2	3
	BIRE311	Summer Internship (2)		
	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	<p>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.</p> <p>1- Classification of insects  2- Beneficial insects.  3- Animal, not insect, pests.  4- Bacterial diseases.  5- Classification of fungi.  6- Caecilian worms</p>
Skills	
Learning Outcomes 2	<p>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.</p>
Learning Outcomes 3	
Ethics	
Learning Outcomes 4	<p>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</p>
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

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

• 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		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.			
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	Insects and their relationship to the environment	Lecture laboratory	Written exam + self-exam (laboratory)
2	5	2- Knows programs for releasing, preserving	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 enemies	Methods used introduce biolog enemies	Lecture laboratory	Written exam + s exam (laboratory
5	5	3- Knows the paras and its ways of living 4- Knows the preda	Insect parasite their types methods reproduction	Lecture laboratory	Written exam + s exam (laboratory
6	5	and its ways of living 5- Studies the behav of parasitism a	Insect parasitoid biological characteristics parasitoid adul behavior of adul	Lecture laboratory	Written exam + s exam (laboratory
7	5	predation 6- Learns the role biological resistance	Insect predator biological traits strategies	Lecture laboratory	Written exam + s exam (laboratory
8	5	insects 7- Identify so	Bacterial resista to insect pest bacteria that ca insect diseases	Lecture laboratory	Written exam + s exam (laboratory
9	5	parasites on insects 8 - Identify some ins	Continuation	Lecture laboratory	Written exam + s exam (laboratory
10	5	predators 9- Identify so	Bacterial resista to pests - caecil - fungi that ca insect diseases	Lecture laboratory	Written exam + s exam (laboratory
11	5	pathogens in insects 10- Gain skill preparing a biologi	Defense mechar in insects - exte defense mechar	Lecture laboratory	Written exam + s exam (laboratory
12	5	control program for c or a group of insect pe	Defense mechar in insects - inte defense mechar	Lecture laboratory	Written exam + s exam (laboratory
13	5	11- Gain skill diagnosing some typ of parasites on insects	Resistance of in parasites to defenses	Lecture laboratory	Written exam + s exam (laboratory
14	5	12- Gain skill diagnosing some typ of insect predators.	Plant resistance pests - agricult resistance - gene - pheromones	Lecture laboratory	Written exam + s exam (laboratory
15	5	13- Gain skill diagnosing some typ of fungi or bacteria insects.	Biological con to insects	Lecture laboratory	Written exam + s exam (laboratory

### 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	<a href="https://www.youtube.com/education">https://www.youtube.com/education</a>