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 Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must

determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Anbar

Faculty/Institute: College of Agriculture

Scientific Department: Department of Plant Protection

Academic or Professional Program Name: Bachelor of Plant Protection

Final Certificate Name: Bachelor of Agricultural Sciences

Academic System: Course-based system

Description Preparation Date: 2024/4/8

File Completion Date: 2024/4/8

Signature: Prof.Ayoob O.Mohammed

Head of Department Name:

Date: 14/04/2024

Signature: Osama H.Mheidi

Scientific Associate Name:

Date: 14-04-2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/4/2024

Signature:

جامعة الأنبار - كلية الزراعة
شعبة ضمان الجودة والأداء الجامعي

Prof.Dr.
Idham Ali Abed Khalaf
Dean of the College of Agriculture

Approval of the Dean

14/4/2024

1. **Program Vision**
Enhancing students' academic level through curriculum development, activating applied research, and striving to introduce the latest agricultural devices and technologies in the field of plant protection. Additionally, expanding postgraduate programs and enhancing the teaching staff with various scientific specialties to achieve the highest possible quality, contributing to the elevation of the Department of Plant Protection and College of Agriculture in global rankings.

2. **Program Mission**
Harnessing all scientific and research capabilities, both theoretical and applied, to address the challenges facing the agricultural sector by preparing competent agricultural engineers capable of solving problems related to plant protection and combating various agricultural pests. This aims to enhance the agricultural sector and improve the quality and quantity of agricultural crops, thereby supporting the overall economy of the country.

3. **Program Objectives**
Providing students with knowledge of the nature and methods of diagnosing agricultural pests and combating them from an academic and professional point of view
Understand the nature of agricultural pests and their livelihood according to scientific standards
Understand the nature of direct and indirect economic damages caused by agricultural pests and how to deal with them according to correct applied scientific methods
Provide students with information on how to manage IPM programs of pests
Develop their awareness regarding dealing with chemical pesticides and how to dispose of their residues
Training students based on the summer training system in the supportive competent authorities, such as the agricultural divisions and the agricultural quarantine

4. Program Accreditation

5. Other external influences

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	12	18	19.67%	
College Requirements	28	83	45.9%	
Department Requirements	21	72	%34.42	
Summer Training	1			
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
First	APP1103	Human rights; freedom & Democracy	1	
First	APP1106	English language 1	1	
First	APP1101	English language 2	1	
First	APP1104	Computer Science 1		3
First	APP2110	Computer Science 2		3
First	APP2111	General chemistry	2	3
First	APP2108	Principles of horticulture	2	3
First	APP2107	Principle of agricultural economic	2	
First	APP2102	Principle of food industries	2	3
First	APP2113	Principle of prevention	2	3
First	APP3109	Botany	2	3
First	APP3105	General entomology 1	2	3
First	APP3112	General entomology 2	2	3
First	APP1114	Physical education		
First	APP1115	Band aid		
First	APP2116	Organic chemistry	2	3
First	APP2117	Engineering drawing	2	3
First	APP3118	Zoology	2	3
Second	APP1206	Arabic language	1	
Second	APP1201	English language 3	1	
Second	APP1204	English language 4	1	
Second	APP1202	Computer Science 3		3
Second	APP1203	Computer Science 4		3

Second	APP2205	Mathematics	3	
Second	APP2002	Machinery & equipment control	2	3
Second	APP2008	Principles of field crops	2	3
Second	APP2009	Principles of soil	2	3
Second	APP2010	Principles of animal production	2	3
Second	APP2011	Principles of statistics	2	3
Second	APP3212	Insects taxonomy	2	3
Second	APP3213	Medical &veterinary insects	2	3
Second	APP3214	Plant nutrition	2	3
Second	APP3215	Plant physiology	2	3
Second	APP1218	Human development		
Second	APP1219	Civil defense		
Second	APP2220	Flat level		
Second	APP2221	Analytic chemistry	2	3
Second	APP2222	Agricultural extension	2	
Second	APP3216	Plant taxonomy	2	3
Second	APP3217	Microbiology	2	3
Third	APP3301	Plant genetic	2	3
Third	APP3302	Experimental design &analysis	2	3
Third	APP3303	Mycology 1	2	3
Third	APP3304	Mycology 2	2	3
Third	APP3305	Insect physiology	2	3
Third	APP3306	Plant ecology	2	3
Third	APP3307	Weed & control methods	2	3
Third	APP3308	Plant pathology	2	3
Third	APP3309	Bee breeding	2	3
Third	APP3310	Nematodes	2	3
Third	APP3311	Plant breeding	2	3

Third	APP3312	Biochemistry	2	3
Third	APP3313	Biotechnology	2	3
Third	APP3314	The Nano technique	2	3
Third	APP3315	Remote sensing	2	3
Fourth	APP3401	Field crops diseases	2	3
Fourth	APP3404	Pesticides	2	3
Fourth	APP3405	Insect ecology	2	3
Fourth	APP3403	Storage pests	2	3
Fourth	APP3406	Diseases of vegetables & protected agriculture	2	3
Fourth	APP3402	Biological control	2	3
Fourth	APP3408	Fruit diseases	2	3
Fourth	APP3409	Plant virology	2	3
Fourth	APP3407	Agriculture mites	2	3
Fourth	APP3410	Field crops insects	2	3
Fourth	APP3411	Horticultures insects	2	3
Fourth	APP3412	Integrated pest management	2	3
Fourth	APP3413	Ecology pollution	2	3
Fourth	APP3417	Seminar	2	
Fourth	APP3418	Research project	1	
Fourth	APP3414	Bacteria &plant pathogenic phytoplasma	2	3
Fourth	APP3415	Technology for the production of mushroom	2	3

8. Expected learning outcomes of the program

Knowledge
1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion 2- Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals. 3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation 4- Emphasizing the importance of combating financial and administrative corruption by the regulatory bodies
Skills
1- Determine the type of pest 2- Determining the level of economic damage 3- Determining the type, method and timing of the control 4- Integrated pest management
Ethics
1 - Through the participation of students in the lecture, based on their prior preparation of the subject. 2 - Giving them an exercise as homework and asking for it to be solved with separate papers, collected from them in the next lecture. 3- Giving the students a case study and dividing the students into groups to write a report about such study. 4- Evaluation through periodic monthly exams.

9. Teaching and Learning Strategies

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
4- Summer training in supporting institutions such as the Directorates of Agriculture, Silos and Agricultural Quarantine

10. Evaluation methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
3- Giving the students a case study and dividing the students into groups to write a report about such study.
4- Evaluation through periodic monthly exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	Crop Fields	Plant Biotechnologies			√	
Prof.	Plant Protection	Pesticides			√	
Assist.Prof.	Plant Protection	Fungal Toxins			√	
Assist.Prof.	Plant Protection	Biological Resistance			√	
Assist.Prof.	Plant Protection	Insects			√	
Assist.Prof.	Plant Protection	Fungi			√	
Assist.Prof.	Plant Protection	Fungi			√	
Assist.Prof.	Crop Fields	Plant Genitics			√	
Lecturer.Dr	Plant Protection	Plant Pathology			√	
Lecturer.Dr	Plant Protection	Insects			√	

Lecturer.	Plant Protection	Plant Protection			√	
Lecturer.	Plant Protection	Plant Protection			√	
Assist. Lecturer.	Plant Protection	Plant Protection			√	
Assist. Lecturer.	Plant Protection	Plant Protection			√	
Assist. Lecturer.	Plant Protection	Plant Protection			√	
Assist. Lecturer.	Plant Protection	Plant Protection			√	

Professional Development

Mentoring new faculty members

Motivating faculty members to join developmental programs and specialized courses held in the scientific department, college, or university, encouraging them to accomplish the required tasks, and preparing educational programs according to the standards required by the Ministry of Higher Education and Scientific Research. Directing them to pass the teaching methods course and the teaching competency course held at the Continuous Education Center/University Presidency.

Professional development of faculty members

Guiding instructors to join skill development courses held in the scientific department, college, or university, such as specialized courses, workshops, and seminars like Civil Defense and ISO courses, etc.

12. Acceptance Criterion

Central

13. The most important sources of information about the program

Website: *https://www.uoanbar.edu.iq/AgricultureCollege/CMS.php?ID=31*
E-mail: *plantprotection@uoanbar.edu.iq*

14. Program Development Plan

Forming committees from the faculty members holding scientific titles and those with expertise to update the curricula to align with scientific advancements for each course.

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
First First	APP1103	Human rights; freedom & Democracy	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	APP1106	English language 1	Basic	√	√	√	√	√	√	√	√	√	√	√	√
First First	APP1101	English language 2	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	APP1104	Computer Science 1	Basic	√	√	√	√	√	√	√	√	√	√	√	√
First First	APP2110	Computer Science 2	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	APP2111	General chemistry	Basic	√	√	√	√	√	√	√	√	√	√	√	√
First	APP2108	Principles of	Basic	√	√	√	√	√	√	√	√	√	√	√	√

		horticulture													
First	APP2107	Principle of agricultural economic	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP2102	Principle of food industries	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP2113	Principle of prevention	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP3109	Botany	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP3105	General entomology 1	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP3112	General entomology 2	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP1114	Physical education	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP1115	Band aid	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP2116	Organic chemistry	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√

First	APP2117	Engineering drawing	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
First	APP3118	Zoology	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1206	Arabic language	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1201	English language 3	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1204	English language 4	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1202	Computer Science 3	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1203	Computer Science 4	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2205	Mathematics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2002	Machinery & equipment control	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2008	Principles of field crops	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

Second	APP2009	Principles of soil	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2010	Principles of animal production	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2011	Principles of statistics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3212	Insects taxonomy	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3213	Medical &veterinary insects	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3214	Plant nutrition	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3215	Plant physiology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1218	Human development	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP1219	Civil defense	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2220	Flat level	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√

Second	APP2221	Analytic chemistry	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP2222	Agricultural extension	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3216	Plant taxonomy	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Second	APP3217	Microbiology	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3301	Plant genetic	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3302	Experimental design &analysis	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3303	Mycology 1	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3304	Mycology 2	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3305	Insect physiology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3306	Plant ecology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3307	Weed & control	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

		methods													
Third	APP3308	Plant pathology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3309	Bee breeding	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3310	Nematodes	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3311	Plant breeding	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3312	Biochemistry	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3313	Biotechnology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3314	The Nano technique	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Third	APP3315	Remote sensing	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3401	Field crops diseases	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3404	Pesticides	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3405	Insect ecology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

Fourth	APP3403	Storage pests	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3406	Diseases of vegetables & protected agriculture	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3402	Biological control	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3408	Fruit diseases	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3409	Plant virology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3407	Agriculture mites	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3410	Field crops insects	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3411	Horticulture s insects	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3412	Integrated pest managemen t	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

Fourth	APP3413	Ecology pollution	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3417	Seminar	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3418	Research project	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3414	Bacteria &plant pathogenic phytoplasma	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
Fourth	APP3415	Technology for the production of mushroom	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√

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

Course Description Form

1. Course Name: Beekeeping

2. Course Code: APP3309

3. Semester / Year: Second/ Third

4. Description Preparation Date: 2024/4/8

5. Available Attendance Forms: lectures

6. Number of Credit Hours (Total) / Number of Units (Total): 75

7. Course administrator's name (mention all, if more than one name)

Name: Waad Hamoudi Awad
Email: waad.awaad@uoanbar.iq

8. Course Objectives

The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.

9. Teaching and Learning Strategies

A- Knowledge and Understanding
A1- Understand the science of beekeeping
A2- Identify the types and breeds of honey bees
A 3- Distinguish between the different pests that infect bees.
A4- Knowing the economic importance of beekeeping
A 5- Knowing the correct and modern methods of beekeeping
A6 - Real knowledge of practical methods for managing the apiary.

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation method

		Outcomes			
1	5	Initial knowledge about bees	the introduction Development and breeding of bees and signed by the animal kingdom and its types Taxonomic position of bees in the animal kingdom Beekeeping in Iraq Breeds of bees in Iraq	Lecture	quiz
2	5	Knowledge beekeeping areas and life behavior	The best beekeeping areas in Iraq Sources of nectar and pollen The life behavior of honey bees The life cycle of honey bees mating behavior egg laying behavior	Lecture	quiz
3	5	Know the divisions and ages of the bee insect	Periods of immature roles for honeybees larval stage virgins stage adult stage Formal traits between queens, workers, and male	Lecture	quiz
4	5	Knowing the economic importance of beekeeping	The economic importance of beekeeping Honey and its benefits Royal food and its benefits Wax and its benefits Pollen and its benefits Bee venom and its benefits Propolis and its benefits	Lecture	quiz
5	5	Know the behavior of mating and laying	Honey bee brood production Economical plant pollination	Lecture	quiz

		eggs	Production of fertilized queens and divisions business of individuals Queen's business Housework work		
6	5	Knowing the work of the workers throughout the year	The work of the field workers collect nectar pollen collection Pollen collection mechanism collecting water water use	Lecture	quiz
7	5	Learn about the external anatomy of a honey bee	External anatomy of a honey bee The head and its appendages The chest and its appendages The abdomen and its appendages the Queen female kingdom Factors affecting the construction of royal houses Queen production supplies Conditions of the nanny sect Breeding of virgin queens queen production	Lecture	quiz
8	5	Learn about the methods and purpose of artificial feeding	robbery industrial feeding nutrition purposes Signs of a nutritional deficiency types of nutrition Important notes on nutrition Feeding times and concentrations of nutrient solutions	Lecture	quiz

			types of food		
9	5	Recognize the trapping and ways to prevent	natural reproduction (scattering) When does expulsion happen? Reasons for the occurrence of swarming swarming damage spurting marks Methods of preventing swarming	Lecture	quiz
10	5	Identifying late parcels and ways to keep parcels	late swarming expulsion and substitution Keeping and housing parcels Some cases of parcel holding Division of sects The stages of producing good denominations	Lecture	quiz
11	5	Learn about honey sorting and packing tools	honey sorting tools Honey sorting tools from modern cells excretions honey filter Packing tools after sorting	Lecture	quiz
12	5	Learn how to sell honey and packaging	packing containers Honey discs and strips Sorting honey from municipal cells Honey sorting for amateurs and beginners Auxiliary tools for the screening process	Lecture	quiz
13	5	Knowing the locations of the beekeepers and the work of the beekeeper	Apiaries sites disintegrated The work of the beekeeper during the months of the year Actions that honey bees do themselves Dispersal measures taken by the beekeeper	Lecture	quiz

			Biological and nutritional status of cells before and after dispersal Indoors in the basement Cell dispersal materials		
14	5	Identify diseases and pests of bees	bee pest diseases brood diseases American brood rot disease Nosemia disease bee paralysis Deformed wings virus	Lecture	quiz
15	5	Learn about some bee pests	Varroa disease Wax moths Great Wax Moth Minor wax moth red hornet Abi Khudair bird	Lecture	quiz

11. Course Evaluation

12. Learning and Teaching Resources

Required textbooks (curricular books any)	
Main references (sources)	Beekeeping for amateurs and beginners / Abdul Baq Muhammad Al-Ali _ 2011
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://m.facebook.com/groups/703717849742773?view permalink&id=1781528738628340 https://m.facebook.com/groups/703717849742773?view permalink&id=1781525558628658 https://m.facebook.com/groups/703717849742773?view permalink&id=1781524501962097 https://m.facebook.com/groups/703717849742773?view permalink&id=1641398395974709. https://m.facebook.com/groups/703717849742773?v

Course Description Form

1. Course Name: Vegetable Diseases and Protected 2. Agriculture	
3. Course Code: APP3406	
4. Semester / Year: SPRING 2023−2024	
5. Description Preparation Date: 8/4/2024	
6. Available Attendance Forms: IN CLASS	
7. Number of Credit Hours (Total) / Number of Units (Total): 5HOURS/3.5 UNITS	
8. Course administrator's name (mention all, if more than one name)	
Name: Assist. Prof. Dr. Jasim Mahmood Abed ag.jasim.mahmoodl@uoanbar.edu.iq	
9. Course Objectives	
Course Objectives	**1- Knowledge and UnderstandingA1. Understand the concept of plant disease** **2. Distinguishing between communicable and non-communicable diseases** **3. Distinguishing between the types of pathogens: fung bacterial, alphaviral, nematode and others** **4. The most important losses caused by vegetable diseases in open and protected agriculture** **5. Knowing the most important diseases that affect vegetable crops in open and protected agriculture.** **6 . Identify the characteristics of protected agriculture i terms of productivity and the environments it requires.**
10. Teaching and Learning Strategies	
Strategy	Teaching therolotical parts in class by using data show and

11. Course Structure					
Week	**Hours**	**ILOs**	**Unit/Module or Topic Title**	**Teaching Method**	**Assessment Method**
1	**5**	**Introduction to plant diseases**	**1- plant disease 2. Losses caused by plant diseases**	**Lecture**	**quiz**

	some new methods, Teaching the practical part through field visits/work in the department's laboratories
11. Course Structure	

			3. Methods used in the diagnosis of plant diseases 4. The most important symptoms and signs of illness 5- How do plants defend themselves? 6- The most important pathogens		
2	5	Diseases of the Solanaceae	The most important fungal, bacterial and viral diseases that affect	Lecture	quiz
3	5	Diseases of the Solanaceae	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
4	5	Diseases of the cucurbit	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
5	5	Diseases of the cucurbit	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
6	5	Compositae Diseases	The most important fungal, bacterial and viral diseases that affect the crops	Lecture	quiz
7	5	Compositae Diseases	The most important fungal, bacterial and viral diseases that affect the crops	Lecture	quiz
8	5	Leguminosae Disease	The most important fungal, bacterial and viral diseases that affect the crops	Lecture	quiz
9	5	Liliaceae Disease	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
10	5	Mallowceae diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
11	5	Diseases of ornamental plants	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
12	5	Nursery diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
13	5	Post - harvest diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz

14	**5**			**Lecture**	**quiz**
15	**5**	**Identify and diagnose nematode diseases**	**The most important l, nematodes diseases that affect the crop**	**Lecture**	**quiz**

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Horticulture and vegetable diseases/Dr. Samir Hosni Mikhail, Dr. Abdel Hamid Tarabieh and Mr. Jawad Al-Zarari / 1981
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Youtube.com Springer.com

Course Description Form

1. Course Name:	
General Mathematics	
2. Course Code:	
3. Semester / Year:	
First Semester/2023−2024	
4. Description Preparation Date:	
15/4/2024	
5. Available Attendance Forms:	
in-person learning	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr.Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq	
8. Course Objectives	
Course Objectives	A-Ability to understand the principle of mathematical functions B-Increasing the skills of students using it to solve the problems C-Ability the undergraduate students to use these skills in different fields. D-Ability the students to graph equations, inequalities and all function
9. Teaching and Learning Strategies	
Strategy	A1. Analysis the problems and understand how can you be ability to solve it. A2. Testing these equations in the practical experimental. A3. Using equations to find variables in the problems. A4. Ability to convert the scales on the real number line. A5. Ability of student to evaluate the problems, and writing the scientific reports. A6. The student can acquire the practical and scientific experience his specialized field.it.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
First	2	Analysis the problems and understand how can you be able to solve it.	The rate of change function	Theoretical Lectures,white board	questions , discussions, and examples
Second	2	Ability to use suitable coordinates in the problems.	Cartesian coordinates	on the white bo	questions , discussions, and examples
Third	2	Ability to use suitable coordinates in the problems.	Increments in coordinates	on the white board, Homewo	questions , discussions, and examples
Fourth	2	Using slope to find the variables in the problems.	Slope and angles of inclination	on the white bo	questions , discussions, and examples
Fifth	2	Exam of first month			
Sixth	2	special cases of slope of lines	Properties of parallel and perpendicular lines	on the white bo	questions , discussions, and examples
Seventh	2	Boundary conditions for	Domain and Range of functions	on the white bo	questions , discussions, and examples
Eighth	2	solving equation of Absolute values and inequalities	Absolute values for equations and inequalities	on the white bo	questions , discussions, and examples
Ninth	2	solving equations of Exponential and logarithm	Exponential and logarithm functions	on the white bo	questions , discussions, and examples
Tenth	2	Exam of second month			
Eleventh	2	solving equations of Trigonometric	Trigonometric functions	on the white bo	questions , discussions, and examples
Twelfth	2	solving equations of Inverse Trigonometric.	Inverse Trigonometric functions	on the white bo	questions , discussions, and examples
Thirteenth	2	Prove identities of	Identities of	on the wl	questions ,

		Trigonometric functions	Trigonometric functions	board, Homewo	discussions, and examples
Fourteenth	2	Testing these equations in the practical experimental.	Solve all homework and problems	on the wl board, Homewo and Applicati by computers	questions , discussions, and examples
		Exam of the third month			

11. Course Evaluation

Theory exam 30%, Practical Quiz 10%, Practical exam 10%, final exam 50%. Final degree from 100%.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Calculus, Thomas, 11Ed, 2006, Addison-Wesley, United States.
Recommended books and references (scientific journals, reports…)	Understanding Basic Calcul S.K.Chung, Wolfram,2007, Hc Kong.
Electronic References, Websites	https://en.wikipedia.org/wiki/Function_ (mathematics(

Course Description Form

1. Course Name: **Experiment Design**

2. Course Code: **AFC1932**

3. Semester / Year: **Course Autumn**

4. Description Preparation Date: **2024**

5. Available Attendance Forms: **Direct**

6. Number of Credit Hours (Total) / Number of Units (Total) 75 / 5

7. Course administrator's name (mention all, if more than one name)

Name:. Dr. Hadeel Sabar Hamad
Email: ag.hadeel.sabar@uoanbar.edu.iq

Course Objectives :

8.

The student learns about the scientific foundations designing and analyzing theoretical and practi experiments	**Learn about modern technologies relevant to designing experiments**

9. Teaching and Learning Strategies

Strategy	**A** - Expanding the student's theoretical and practical understandings **B**- Access to recent and critical experiments related to experimental design **C**-Learn about methods for designing experiments, processes, and conditions surrounding the research or experiment

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	(30 hours theoretical + 45 practical) (75 hours 5 hours (2 + 3)	Look and work Explanation and interpretation with Use means Electronic clarification	Introduction to the history of statistics, first researchers in designing experimer studying statistical tests	theoretical practical	Theoretical and practical tests
2	5	Look and work Explanation and interpretation with Use means Electronic clarification	An introduction to the history of statistics, the first researchers in statistics and experimental design,	theoretical and practical	Theoretical and practical tests
3	5	Look and work Explanation and interpretation with Use means Electronic clarification	The importance designing experime for the researcher	theoretical and practical	Theoretical and practical tests
4	5	Look and work Explanation and interpretation with Use means Electronic clarification	Sources of differe in the design experiments	theoretical and practical	Theoretical and practical tests
5	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely randomized C isometric design	theoretical and practical	Theoretical and practical tests
6	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve iso-repea whole-randomized CRD exercises	theoretical and practical	Theoretical and practical tests
7	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely randomized C design with uneq replicates.	theoretical and practical	Theoretical and practical tests
8	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve the exercises a complete randomi CRD isome replication design.	theoretical and practical	Theoretical and practical tests

9	5	Look and work Explanation and interpretation with Use means Electronic clarification	Randomized compl block design (RCBI	theoretical and practical	Theoretical and practical tests
10	5	Look and work Explanation and interpretation with Use means Electronic clarification	RCBD Randomi Complete Bl Design Exercises	theoretical and practical	Theoretical and practical tests
11	5	Look and work Explanation and interpretation with Use means Electronic clarification	Missed View Rating	theoretical and practical	Theoretical and practical tests
12	5	Look and work Explanation and interpretation with Use means Electronic clarification	latin square design	theoretical and practical	Theoretical and practical tests
13	5	Look and work Explanation and interpretation with Use means Electronic clarification	split experiences	theoretical and practical	Theoretical and practical tests
14	5	Look and work Explanation and interpretation with Use means Electronic clarification	Split plot experiments exercises	theoretical and practical	Theoretical and practical tests
15	5	Look and work Explanation and interpretation with Use means Electronic clarification	Orthogonal comparisons experiments and trend analysis	theoretical and practical	Theoretical and practical tests

11. Course Evaluation

1-Weekly tests (quiz) and semester and final exams (theoretical and practical).
2- Interaction within the lecture.
3- Attendance.
4- Commitment and discipline within the classroom and laboratory.
5- Preparing scientific reports, providing scientific explanations and presenting them
6-Expanding the student's theoretical and practical understandings
7- Learn about modern techniques relevant to Design of experiments

8- Identify the surrounding factors related to the science of Design of experiments
9-Learn about Design of experiments and field planning operations.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of Statistical methods book for agricultural research
Main references (sources)	Book of Agricultural experiment design and analysis book
Recommended books and references (scientific journals, reports…)	Book of applications in the design and analysis of experiments
Electronic References, Websites	hpp// **Principles of experimental design. com.**

Course Description Form

13. Course Name: Field crops insects
14. Course Code: APP3410
15. Semester / Year: Second/fourth
16. Description Preparation Date: 2024/4/8
17.Available Attendance Forms: lectures
18.Number of Credit Hours (Total) / Number of Units (Total): 75
19. Course administrator's name (mention all, if more than one name)
Name: Waad Hamoudi Awad Email: waad.awaad@uoanbar.iq
20. Course Objectives
The field crop insects course aims to introduce students to the insect pests that infect field crop plants and how to identify them through the phenotypic characteristics of these insects. damage using the best technology.
21. Teaching and Learning Strategies
1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture with the participation of all students in the section with the professor to give the material as a kind of interaction. 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	1- Entomology 2- class of insects 3- Characteristics of a class of insects 4- Evolution and Impossibility [Metamorphosis 5- Insect Orders	Knowledge of entomology and identification of the characteristics of the class of insects and the types of evolution in insects	Lecture	
2	5	Gryllatalpa gryllotalpa Life cycle, damage and control method -2Desert locusts Schistocerca gregaria Life cycle, damage and control method	Biological knowledge, description and damage of the desert locust and carp insects	Lecture	
3	5	-1Ocnogyna loewii -2Microcerotermes diversus Study the life cycle, damage and control method	Knowledge of the outward appearance, lifestyle and damage of spring worms and termites	Lecture	
4	5	1-Eurygaster integriceps -2Haplothrips tritici Study the life cycle, damage and control method	Knowledge of the external appearance, lifestyle and damage of the sun and thrips insects	Lecture	
5	5	-1Schizaphis graminum -2Oria musculosa -3 Syringopais temperatella Study the life cycle, damage and control method	Knowledge of the structure and knowledge of the external shape, lifesty and damage to an ins of wheat, ear breaker and wheat leaf borer	Lecture	

6	5	–1 Anisoplia austriaca –2 Zabrus morio –3 Phytophaga destructor Study the life cycle, damage and control method	Knowledge of the structure, external appearance, lifestyle and damage of the wheat-making insect, the chewer of wheat seedlings and the Hechian fly.	Lecture	
7	5	–1 Cephus pygmaeus –2Rhopalosiphum (Aphis) maidis Study the life cycle, damage and control method	Knowledge of the structure, external shape, lifestyle and damage of the two insects of the Saw-wheat wasp and from the aphid corn	Lecture	
8	5	–1 Leucania loreyi –2 Sesamia critica –3 Aphis craccivora Study the life cycle, damage and control method	Knowledge of the structure, outward appearance, lifestyle, and damage to cornworms, corn stalk borers, Aphis craccivora	Lecture	
9	5	–1 Therioaphis maculat Hypera fascocinerea Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and the control of my insects from Therioaphis maculate and the Hypera fascocinerea	Lecture	
10	5	–1 Aphis fabae –2 Bruchus rufimanus –3 Bruchidius incarnates	Knowing the external appearance and symptoms of infection and control each insect of the aphid black bean, the bean beetle, the legume worm and the cowpea leaf	Lecture	

		-4 Cosmolyce boeticus -5 Phytomysa atricarnis Study the life cycle, damage and control method	border		
11	5	-1 Aphis gossypii Clover -2 Bemisia gossypipedra (Bemisia tabaci(-3 Thrips tabaci Lind Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and control each of the cotton bug, cotton white fly and onion thrips	Lecture	
12	5	-1 Oxycarenus hyalinipennis cost -2 Spodoptera Littoralis (Boisd(Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and control of both the cottonseed bugs and the cotton leaf worm	Lecture	
13	5	-1 Pegomyia hoyoscyami -2Phyllotreta cruciferae -3 Myzus persicae Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and control each of the beet leaf borer, the cruciferous flea beetle, and the aphid green peach	Lecture	
14	5	-1 Spodoptera (Laphygma) exigua	Knowing the external appearance and symptoms of	Lecture	

		-2 Agrotis ipsilon -3 Heliothis armigera -4 Eris insulana Boisd Study the life cycle, damage and control method	infection and control each of the green worm, cutworm, American cotton nut worm and thistle		

23. Course Evaluation

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Field crop insects / Iyad Youssef Al-Haj Ismail Economic Insects / Ibrahim Kaddouri
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

25. Course Name:	
Plant Breeding	
26. Course Code:	
APP3311	
27. Semester / Year:	
Semester	
28. Description Preparation Date:	
15/4/2024	
29.Available Attendance Forms:	
In person, class	
30.Number of Credit Hours (Total) / Number of Units (Total)	
31. Course administrator's name (mention all, if more than one name)	
Name: Faiz Tahseen Fadhel Email: ag.faiz.tahseen@uoanbar.edu.iq	
32. Course Objectives	
Course Objectives	1- The student will be acquainted with the scientific bases in plant breeding, both theoretical and practical 2- Expand the student's theoretical and practical knowledge 3- Getting acquainted with the modern techniques related to plant breeding. 4- Increasing students' awareness in identifying recent trends in plant breeding, which include modern and vital technologies.5- Identifying biotic and abiotic factors related to plant breeding. 6- The student deduces the relationship between the genetic structure of the organism and the traits that distinguish it from others and how to transfer those traits between generations
33. Teaching and Learning Strategies	
Strategy	1-Adopting the method of giving lectures and linking each topic with examples from the reality of agricultural work 2- Giving the students some simple practical exercises that

	are discussed by the students and solved during the lecture With the participation of all students in the section with the professor to give the material as a form of interaction 3- Training students in laboratories by conducting the necessa laboratory tests for diagnosis

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	The student's knowledge of the first and founding era of studied science	Introduction to the history plant breeding	Presentation and training	Discussion Weekly and mon testing
2	5	Student knowledge of systems Reproduction is fundamental understanding Genetic variations	Reproduction systems in plants,	Presentation and training	Discussion Weekly and mont testing
3	5	The student's knowledge of genetic material, which is the basis of the work of plant breeders	Cell, nucleus, chromosom	Presentation and training	Discussion Weekly and mont testing
4	5	The student's familiarity with sources Genetic variations in The plant community, which i considered the raw material fo plant development and improvement	Genetic variations sources And environmental interaction	Presentation and training	Discussion Weekly and mont testing
5	5	Student awareness of how to transfer Intergenerational traits and how Control it and benefit from it Education improvement programmers	Hardy and Weinberg's law, genetic action and genetic repetition Types of genetic action	Presentation and training	Discussion Weekly and mont testing
6	5	One of the important cases in Plant to understand the mechanism of production of some Hybrids and breeds	Sterility, male and cytoplasmic sterility, self-incompatibility, and culturing of strains in cytoplasmic male sterility.	Presentation and training	Discussion Weekly and mont testing
7	5	How to produce hybrids and varieties and mix the desired genotypes	Multi-parental hybrid cultivars, their deduction, progeny deduction, transfe traits to progeny, isolation distances.	Presentation and training	Discussion Weekly and mont testing
8	5		Quantitative genetics, crop yield improvement and the genes responsible for it, yie and yield components	Presentation and training	Discussion Weekly and mont testing
9	5	To understand the breeding of self-pollinating plants	Breeding cross-pollinated crops, quantitative selection	Presentation and training	Discussion Weekly and mont testing
10	5	To understand the breeding mechanism of cross-pollinate	Calculating the Heterosi	Presentation and training	Discussion Weekly and mont

		plants	of the hybrid and attributing heritability in the broad and narrow se		testing
11	5	Knowledge of the mechanism development of vegetative reproductive crops	Breeding vegetative crops, breeding, cultivar selection and hybrid breeding	Presentation and training	Discussion Weekly and mont testing
12	5	Knowing the mechanism of controlling the trait, whether it is genetic or environmental , how to benefit from it in breeding programs, and knowing which genetic combinations are best for use.	Breeding to resist various epidemics	Presentation and training	Discussion Weekly and mont testing
13	5	The student's knowledge of genetic material, which is the basis of the work of plant breeders	Tissue culture and biotechnology in plant breeding	Presentation and training	Discussion Weekly and mont testing
14	5	Understanding Modern Methods in plant breeding	Applications of genetic engineering in plant breeding and genetically modified plants,	Presentation and training	Discussion Weekly and mont testing

35. Course Evaluation

1- Daily and monthly tests through questions and discussions in the subject.
2- Evaluating the student's participation in research and scientific reports.
3- Student activities through the possibility of applying some experiments

36. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamentals of field crops breeding and genetics
Main references (sources)	
Recommended books and references (scientific journals, reports…)	1- Plant breeding and improvement (Medhat A Sahoki, Hamid Globe Ali and Muhammad Ghaf Ahmad) 2-Breeding of field crops (john Milton)
Electronic References, Websites	

Course Description Form

37. Course Name:	
Plant Breeding	
38. Course Code:	
APP3301	
39. Semester / Year:	
Semester	
40. Description Preparation Date:	
15/4/2024	
41.Available Attendance Forms:	
In person, class	
42.Number of Credit Hours (Total) / Number of Units (Total)	
43. Course administrator's name (mention all, if more than one name)	
Name: Faiz Tahseen Fadhel Email: ag.faiz.tahseen@uoanbar.edu.iq	
44. Course Objectives	
Course Objective	1- The student will be acquainted with the scientific bases in plant genetics, both theoretical and practical 2- Expand the student's theoretical and practical knowledge 3- Getting acquainted with the modern techniques related to plant genetics. 4- Increasing students' awareness in identifying recent trends in plant genetics, which include modern and vital technologies. 5- Identifying biotic and abiotic factors related to plant genetics. 6- The student deduces the relationship between the genetic structure of the organism and the traits that distinguish it from others and how to transfer those traits between generations
45. Teaching and Learning Strategies	
Strategy	4- Adopting the method of giving lectures and linking each topic with examples from the reality of agricultural work 5- Giving the students some simple practical exercises that are discussed by the students and solved during the lecture With the participation of all students in the section with the professor to give the material as a form of interaction 6- Training students in laboratories by conducting the necessary laboratory tests

	diagnosis

46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	The student's knowledge of the first and founding era of studied science	An introduction to genetics, including its origins, development prospects, and achievements in the fields of agriculture, medicine, society, and its relationship with plant breeding.	Presentation and training	Discussion Weekly and monthly testing
2	5	Student knowledge of systems Reproduction is fundamental understanding Genetic variations	Introduction to the cell and chromosome, types of divisions: cell division, meiosis, and mitosis in prokaryotic organisms	Presentation and training	Discussion Weekly and monthly testing
3	5	The student's knowledge of genetic material, which is the basis of the work of plant breed	Mendelian inheritance: the laws of isolation and free distribution of genes, types of crossbreeding, the use of the Point square, the branching method in determining the ratios of genotypes, phenotypic forms, and types of gametes.	Presentation and training	Discussion Weekly and monthly testing
4	5	The student's familiarity with sources Genetic variations in The plant community, which is considered the raw material for plant development and improvement	Modifications in Mendelian ratios, genetic overlap, lethal alleles, multiple alleles, and self-incompatibility alleles	Presentation and training	Discussion Weekly and monthly testing
5	5	Student awareness of how to transfer Intergenerational traits and how Control it and benefit from it Education a improvement programmers	Statistical analysis of genetic data, chi-square test	Presentation and training	Discussion Weekly and monthly testing
6	5	One of the important cases in Plant to understand the mechanism of production of so Hybrids and breeds	Linkage, crossing over, and chromosomal mapping	Presentation and training	Discussion Weekly and monthly testing
7	5	How to produce hybrids and varieties and mix the desired genotypes	Inheritance of sex and traits linked, determined and influenced by sex, sex in plants	Presentation and training	Discussion Weekly and monthly testing
8	5		Structural changes in chromosomes: additions, deletions, inversions, and inversions	Presentation and training	Discussion Weekly and monthly testing
9	5	To understand the breeding of self-pollinating plants	Types of chromosome duplication, its causes, effects,	Presentation and training	Discussion Weekly and monthly testing

			replicative production and plant breeding		
10	5	To understand the breeding mechanism of cross-pollinated plants	Genetic material: DNA and RNA, specifications and structural composition, types, RNA, Karvith's experiment, replication of genetic material	Presentation and training	Discussion Weekly and monthly testing
11	5	Knowledge of the mechanism development of vegetative reproductive crops	The gene, cloning, translation, protein construction, regulation of gene function, a brief definition of genetic transfer methods	Presentation and training	Discussion Weekly and monthly testing
12	5	Knowing the mechanism of controlling the trait, whether it is genetic or environmental , how to benefit from it in breeding programs, and knowing which genetic combinations are best for use.	Genetic mutations	Presentation and training	Discussion Weekly and monthly testing
13	5	The student's knowledge of genetic material, which is the basis of the work of plant breed	Cytoplasmic inheritance	Presentation and training	Discussion Weekly and monthly testing
14	5	Understanding Modern Methods in plant breeding	Quantitative inheritance, population inheritance, and heritability coefficient,	Presentation and training	Discussion Weekly and monthly testing

47. Course Evaluation

4- Daily and monthly tests through questions and discussions in the subject.
5- Evaluating the student's participation in research and scientific reports.
6- Student activities through the possibility of applying some experiments

48. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamentals of field crops breeding and genetics
Main references (sources)	
Recommended books and references (scientific journals, reports…)	1- Plant breeding and improvement (Medhat Al Sahoki, Hamid Globe Ali and Muhammad Ghaffar Ahmad) 2-Breeding of field crops (john Milton)
Electronic References, Websites	

Course Description Form

1. Course Name: pesticides

2. Course Code: Fourth \ **APP3404**

3. Semester / Year: Autumn 2023 – 2024

4. Description Preparation Date: 12 \ 4 \ 2024

5. Available Attendance Forms:

Lectures

6. Number of Credit Hours (Total) / Number of Units (Total)

75 Hours 5 Untis

7. Course administrator's name (mention all, if more than one name)

Name: Pro.Dr.Khalid W.Ibade
Email: ag.khalid.abade@uoanbar.edu.iq

8. Course Objectives

Course Objectives	Knowing how to diagnose the pest. knowing how to determine the level of damage Knowing method of appropriate control and at the appropriate time Knowing how to manage the integrated crop.

9. Teaching and Learning Strategies

Strategy	The academic course (Pesticides) discusses the fundamental concep of pesticides and categorizes them according to specific criteria.It also delves into methods of pest control using major groups of chemical pesticides, highlighting the characteristics of each group, their modes of action, and their impact and toxicity on organisms and the environment

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**5 hours**	**Agricultural Pests, the Damage They Cause**	**Types of pests Damage of pests.**	**Lecture**	**Exam**

	5 hours	Economic Threshold	Assessing the level of infestation.		
2	5 hours	Definition of Pesticide. Advantages and Disadvantages of Pesticides	Determining the Economic threshold.	Lecture	Exam
3		A Historical Overview of Pesticide Use.	Reviewing the use of pesticides and their types.	Lecture	Exam
4	5 hours	The Key Points to Follow in Chemical Pest Control.	Identifying the type , economic threshold of pest , Toxicity types .	Lecture	Exam
5	5 hours	Toxicology, Acute Toxicity, Chronic Toxicity, Pesticide Residue.		Lecture	Exam
6	5 hours	Chemical Pesticide Metabolis Metabolic Enzymes, General Metabolic Pathways.	Understand metabolism Enzymes and metabolic pathways.	Lecture	Exam
7	5 hours	Semester Exam: Pesticide Classification, Principles of Classification According to Pe Type.	Dividing pesticides by Type of pest, toxicity, application methods.	Lecture	Exam
8	5 hours	Absorption and Translocation of Chemical Pesticides.	Methods of pesticide absorption.	Lecture	Exam
9	5 hours	Insecticides and Their Classifications.	Organochlorine , Carbamates , Pyrethroids IGR pesticides .	Lecture	Exam
10	5 hours	Fungicides.	Division of Fungicides.	Lecture	Exam
11	5 hours	Herbicides.	Division of Herbicides.	Lecture	Exam
12	5 hours	Nematicides and Rodenticides.	Division Nematicides and Rodenticides pesticides.	Lecture	Exam
13	5 hours	Semester Exam: Pest Resistance to Pesticides + Pesticide Analysis.	Types of resistance , knowing the methods of analysis pesticides.	Lecture	Exam
14	5 hours		Understanding the ecosystem and the pesticide pollution.	Lecture	Exam
15	5 hours	Environmental Pollution by Pesticides.		Lecture	Exam

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular boc if any)	**Chemical pesticides in plant protection .1979 .**
Main references (sources)	**Pesticides (1993) .**
Recommended books and references (scientific journals, reports…)	**- Pesticides science** **- Principles of plant pest control**
Electronic References, Websites	**https://en.wikipedia.org/wiki/Pesticide** **https://www.niehs.nih.gov/health/topics/agents/pesticides/index.cfm** **https://www.researchgate.net/publication/269398458_Pesticides**

Course Description Form

1. Course Name: Orchard insects

2. Course Code: Fourth \ **APP3411**

3. Semester / Year: Spring 2023 – 2024

4. Description Preparation Date: 12 \ 4 \ 2024

5. Available Attendance Forms:

Lectures

6. Number of Credit Hours (Total) / Number of Units (Total)

75 Hours 5 Untis

7. Course administrator's name (mention all, if more than one name)

Name: Pro.Dr.Khalid W.Ibade
Email: ag.khalid.abade@uoanbar.edu.iq

8. Course Objectives

Course Objectives	Identifying the types of insects that afflict plants grown within orchar whether vegetables or fruits, along with understanding their harm stages and damage, along with methods of control.

9. Teaching and Learning Strategies

Strategy	Adopting the method of delivering lectures and linking each topic with examples from the actual practice of agriculture, while providing students with simple practical exercises that are discussed and solved during the lecture, with the participation of all students in the class along with the professor to enhance interaction. Additionally, training students in laboratories by conducting necessary laboratory tests for diagnosis.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**5 hours**	**Entomology and its relationsh to the Environment. .**	**Environmental Factors Influencing the Presence of Insects.**	**Lecture**	**Exam.**

2	5 hours	Metamorphosis, and the types of larvae and pupa.	The metamorphosis , knowing the types of larvae and pupae.	Lecture	Exam.
3	5 hours	Desert locusts , the mole criket and termite insects.	Identifying the damages insects, economic, Methods Control.	Lecture	Exam.
4	5 hours	Aphids insects and types .	Identifying of aphids types .	Lecture	Exam.
5	5 hours	Palm tree insects.	Identifying the damages insects, economic, Methods Control.	Lecture	Exam.
6	5 hours	Citrus insects and stem borers .	The important insects that affect citrus, their life cycles, the damages , they cause, and methods control	Lecture	Exam.
7	5 hours	Vegetable insects 1, cabbage butterfly and red pumpkin beetle .	Identifying vegetable pests, economic, and the damages they cause.	Lecture	Exam.
8	5 hours	Cabbage webworm and Diamondback moth.	Identifying the scientific and common names , modes of damage, methods control.	Lecture	Exam.
9	5 hours	Vegetable insects 2, melon fly, Small Cucurbit Fly.	Identifying the damages insects, economic, Methods Control.	Lecture	Exam.
10	5 hours	black cutworm, whitefly and gastropod	Identifying the damages insects, economic, methods of control.	Lecture	Exam.
11	5 hours	Vegetable insects 3, bollworm and potato tuber moth .	Identifying the scientific and common names , modes of damage, methods control	Lecture	Exam.
12	5 hours	Eggplant stem borer, onion thrips.	The importance insect, its l cycle, damages it causes, and methods of control.	Lecture	Exam.
13	5 hours	Carob moth , Moth Cydia and Fig-Tree Moth.	Identifying vegetable pests, economic, and the damages they cause.	Lecture	Exam.
14	5 hours	Fig fruit fly, olive leaf fly.	Identifying the damages insects, economic, Methods Control.	Lecture	Exam.
15	5 hours	Grape leafhopper , Hawk Moth and cicada.	The importance insect, its l cycle, damages it causes, and methods of control	Lecture	Exam.

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricu books, if any)	Pests of Orchards" by Dr. Iyad Youssef Al-Haj Ismail and Bannan Rakan Dabdoub. Published in 2008 by the Ministry of Higher Education and Scientific Research, Mosul University, 2010.
Main references (sources)	Insects of Orchards" by Salem Jameel Jergis and Dr. Mohammed Abd Karim Mohammed. Published in 1992 by the Ministry of Higher Education and Scientific Research, Mosul University, College of Agriculture and Forestry.
Recommended books and references (scientific journals, reports…)	Pests of Fruit CropsA Colour Handbook, Second Edition By Alford , Copyriht . 2014. David V.
Electronic References, Websites	https://link.springer.com/book/10.1007/978-3-662-07913-3

Course Description Form

1. Course Name: MYCOLOGY 2
2. Course Code: APP3034
3. Semester / Year: Semester
4. Description Preparation Date: 8/ 4/ 2024
5. Available Attendance Forms: Lecture
6. Number of Credit Hours (Total) / Number of Units (Total)70 Hours
7. Course administrator's name (mention all, if more than one name)
Name: Theyab A Farhan Email: deab.frahen@uoanbar.idu.iq
8. Course Objectives

Course Objective The course aims to teach students what fungi and mycology are And its direct and indirect economic damage to agricultural crops	What are the symptoms of infection and how to l diagnose and combat it?Correct scientific method the lowest costs.....
9. Teaching and Learning Strategies	
Strategy	1- Knowing how to diagnose fungi and their diseases 2 - Knowing how to determine the level of damage, the appropriate type and method of control, and the appropriate timing 3- Knowing how to manage integrated crops

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	kingdom of fungi	The most important characteristics of fungi	Lecture	quiz
2	5	Phylum Chytridia fungi	Knowledge of chytrid fungi	Lecture	quiz
3	5	The most important clas and orders of chytrid fur	Knowledge of composition Internal and external fungi	Lecture	quiz
4	5	The most important clas and orders of chytrid fur	Know the types of fungi	Lecture	quiz
6	5	Division of aerobic fung	Diagnosis of the most important fungi	Lecture	quiz
7	5	Sections, orders and ger of aerobic fungi	Identify the most important fungi And its damage	Lecture	quiz
8	5	Division of zygotic fung	Identify the types	Lecture	quiz

			The structures formed by the gelatinous cells		
9	5	Mycorrhizal fungi divisi	The foundations opted in diagnosis This fungus	Lecture	quiz
10	5	The most important orc and genera of Mycorrhiz	characteristics of these fungi	Lecture	quiz
11	5	Phylum Cystic Fungi	Fundamentals of fungal diagnosis Cystic	Lecture	quiz
12	5	Sections of cyst fungi	Its distinction General characteristics	Lecture	quiz
13	5	characteristics of Phylum asidiomycetes Sections of basidiomycetes	Identify the most important types And ways to classify them	Lecture	quiz
14	5	Imperfect fungi	General characteristics	Lecture	quiz

11. Course Evaluation

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
3- Giving the students a case study and dividing the students into groups to write a

report about that study. 4- Evaluation through monthly exams	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	The Fungi . book Plant disease. book
Main references (sources)	Journals and reserch
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Web set

Course Description Form

1. Course Name: MYCOLOGY 2
2. Course Code: APP3034
3. Semester / Year: Semester
4. Description Preparation Date: 8/ 4/ 2024
5. Available Attendance Forms: Lecture
6. Number of Credit Hours (Total) / Number of Units (Total)70 Hours
7. Course administrator's name (mention all, if more than one name)
Name: Theyab A Farhan Email: deab.frahen@uoanbar.idu.iq
8. Course Objectives

Course Objective The course aims to teach students what fungi and mycology are And its direct and indirect economic damage to agricultural crops	What are the symptoms of infection and how to l diagnose and combat it?Correct scientific method the lowest costs.....

9. Teaching and Learning Strategies	
Strategy	1- Knowing how to diagnose fungi and their diseases 2 - Knowing how to determine the level of damage, the appropriate type and method of control, and the appropriate timing 3- Knowing how to manage integrated crops

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	kingdom of fungi	The most important characteristics of fungi	Lecture	quiz
2	5	Phylum Chytridia fungi	Knowledge of chytrid fungi	Lecture	quiz
3	5	The most important clas and orders of chytrid fur	Knowledge of composition Internal and external fungi	Lecture	quiz
4	5	The most important clas and orders of chytrid fur	Know the types of fungi	Lecture	quiz
6	5	Division of aerobic fung	Diagnosis of the most important fungi	Lecture	quiz
7	5	Sections, orders and ger of aerobic fungi	Identify the most important fungi And its damage	Lecture	quiz
8	5	Division of zygotic fung	Identify the types	Lecture	quiz

			The structures formed by the gelatinous cells		
9	5	Mycorrhizal fungi divisi	The foundations opted in diagnosis This fungus	Lecture	quiz
10	5	The most important orc and genera of Mycorrhiz	characteristics of these fungi	Lecture	quiz
11	5	Phylum Cystic Fungi	Fundamentals of fungal diagnosis Cystic	Lecture	quiz
12	5	Sections of cyst fungi	Its distinction General characteristics	Lecture	quiz
13	5	characteristics of Phylum asidiomycetes Sections of basidiomycetes	Identify the most important types And ways to classify them	Lecture	quiz
14	5	Imperfect fungi	General characteristics	Lecture	quiz

11. Course Evaluation

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
3- Giving the students a case study and dividing the students into groups to write a

report about that study. 4- Evaluation through monthly exams	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	The Fungi . book Plant disease. book
Main references (sources)	Journals and reserch
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Web set

Course Description Form

49. Course Name:	
Crimes of the former Baath regime / AL Baath Crimes	
50. Course Code:	
BACR205	
51. Semester / Year:	
SEMESTER	
52. Description Preparation Date:	
15/4//2024	
53.Available Attendance Forms:	
Presence	
54.Number of Credit Hours (Total) / Number of Units (Total)	
30 hours 2 units per week	
55. Course administrator's name (mention all, if more than one name)	
Name: mohammed kareem shaker Email: ag.mohammed.kareem@uoanbar.edu.iq	
56. Course Objectives	
1-Preparing educated students with correct ideas 2- Instilling noble values and morals	**3- Helping in writing scientific research objectively** **4- Know the facts and not falsify them** **5- Knowing the repressive methods used by the former regime**
57. Teaching and Learning Strategies	
Strategy	1- Enabling students to obtain the intellectual framework 2- Preparing students with a correct culture 3- Instilling and preserving the principles of patriotism 4- Developing the intellectual side of students 5- Vocabulary formulation and its absence 6- Expanding cognitive awareness

58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding an	Violation of rights a	My presence	the exam
2	2	learning	freedoms	My presence	the exam
3	2	skills developmen	A descriptive overvie	My presence	the exam
4	2	Know the facts	of political systems	My presence	the exam
5	2	Knowledge of sou	The Baathist regime's	My presence	the exam
6	2	principles	violation of rights and	My presence	the exam
7	2	Knowledge and	freedoms	My presence	the exam
8	2	awareness	The impact of the	My presence	the exam
9	2	Learn high values	behavior of the forme	My presence	the exam
10	2	raising awareness	Baathist regime on	My presence	the exam
11	2	Knowledge and	the society	My presence	the exam
12	2	perception	The impact of the	My presence	the exam
13	2	Crystallization of	transitional period	My presence	the exam
14	2	ideas	The psychological fiel	My presence	the exam
15	2	Mind developmen	+ the social field	My presence	
		Learn the facts	Religion and state		
		Brief and learn	First month exam		
		Discrimination	Culture, media, and th		
		Understanding an	militarization of socie		
		perception			
		The right style	The impact of		
			oppression and wars		
			the environment and		
			population		
			The use of		
			internationally		
			prohibited weapons a		
			environmental polluti		
			Scorched earth policy		
			drying of the marshes		
			Destruction of the		
			agricultural and anim		
			environment		
			Mass graves		
			Second month exam		

59. Course Evaluation

1- Through daily and monthly exams, homework, oral exams, attendance, and
2- class activities.

60. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Curriculum Crimes of the former Baath regime
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Arabic	
2. Course Code:	
BRAL104	
3. Semester / Year:	
SEMESTER	
4. Description Preparation Date:	
15/4//2024	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours 2 units per week	
7. Course administrator's name (mention all, if more than one name)	
Name: mohammed kareem shaker Email: ag.mohammed.kareem@uoanbar.edu.iq	
8. Course Objectives	
1- Preparing students, including the Arabic language 2- Instilling the values of the Arabic language the hearts of students	**3–Assistance in writing scientific research in objective Arabic** **4– Familiarity with Arabic language vocabulary and correct spelling** **5– Knowing the common mistakes**
9. Teaching and Learning Strategies	
Strategy	1- Enabling students to obtain the intellectual framework for the Arabic language subject 2- Preparing students linguistically and educationally 3- A solid knowledge of the Arabic language vocabulary that enables the student formulate Arabic vocabulary 4- Avoid spelling mistakes 5- Correct pronunciation of some vocabulary

	6- Expanding cognitive awareness

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding an	Sections of speech	My presence	the exam
2	2	learning	punctuation marks	My presence	the exam
3	2	skills developmen	Common linguistic	My presence	the exam
4	2	Correct spelling	errors	My presence	the exam
5	2	Know the errors	The difference	My presence	the exam
6	2	Knowledge and	between dha and	My presence	the exam
7	2	awareness	dha	My presence	the exam
8	2	Learn to parse	Solar and lunar lar	My presence	the exam
9	2	Learn to parse	The simple and	My presence	the exam
10	2	Knowledge and	marbuta tā’	My presence	the exam
11	2	perception	Number and numb	My presence	the exam
12	2	Learn Arabic	Suspicious actions	My presence	the exam
13	2	Proper	Imperfect verbs	My presence	the exam
14	2	pronunciation	The subject and th	My presence	the exam
15	2	Learn the differences Brief and learn Discrimination Understanding an perception The right style	predicate Sound feminine plural Sound masculine plural The parsing Discrimination Exception	My presence	

11. Course Evaluation

1- Through daily and monthly exams, homework, oral exams, attendance, and class activities.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Arabic language books
Recommended books and references	

(scientific journals, reports…)	
Electronic References, Websites	