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/

2025

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 of Basrah

College of Agriculture

Scientific Department: **Plant Protection**

Program Name (Academic or Professional): **Bachelor of Science in Agriculture**

Final Certificate Name: **Bachelor of Science in Agriculture / Plant Protection**

Academic System: **Courses**

Description Preparation Date: 01/09/2024

File Completion Date: 10/8/2025

Signatures:
Head of Department Name:
Dr. Aqeel Adnan Alyousf
Signature:
Date:10/8/2025

Signatures:
Scientific Associate Name:
Dr. Sadiq Ghabar Muthsin
Signature:
Date:

The file is checked by

Department of Quality Assurance and University Performance

Director: **Dr. Riyadh A. Armayla**

Date:

Signature:

Approval of the Dean: **Dr. Sarmad Gh. Mohammed**

Signature:

Date:

1. Program Vision

The Department of Plant Protection at the College of Agriculture – University of Basrah aspires to be a leading center in education and scientific research, and a beacon of knowledge and innovation in the field of plant protection. This is achieved through the integration of modern technologies and artificial intelligence in the areas of diagnosis, control, and biological monitoring. The department aims to prepare a generation of scientifically and practically qualified specialists capable of utilizing knowledge and technology to address contemporary agricultural challenges and actively contribute to achieving food security and serving the community.

2. Program Mission

The Department of Plant Protection aims to qualify distinguished scientific cadres capable of supporting agricultural research and production institutions at the local, regional, and international levels by providing a comprehensive academic education that keeps pace with scientific and technological advancements in the field of plant protection.

The department focuses on developing students' research and knowledge skills in plant protection, while promoting the use of modern technologies such as artificial intelligence and environmentally friendly techniques for sustainable pest control. It is also committed to instilling social and cultural values in students and actively responding to the evolving demands of the agricultural labor market.

3. Program Objectives

General Goal 1:
To embody the vision, mission, and objectives of the College of Agriculture – University of Basrah by applying best educational practices and adopting smart systems to ensure academic quality and improve institutional performance.

General Goal 2:
To prepare students with high scientific and technical competencies in the field of plant protection that align with the evolving labor market.

Specific Objectives:

- Enable students to understand basic and advanced concepts in plant protection, including the diagnosis of agricultural pests such as insects, plant pathogens, and others, as well as their various control methods.
- Enhance students' abilities to use modern digital technologies such as artificial intelligence in designing predictive models to monitor and forecast the spread of pests and plant diseases.
- Qualify students for laboratory and practical work in plant protection through training in pesticide residue analysis software and disease pathogen diagnosis.
- Prepare students to manage specialized plant protection projects, including the establishment and management of beekeeping and agricultural pest control ventures.
- Prepare students for postgraduate studies in specialized fields such as plant pathology, entomology, and environmentally friendly pest control methods, particularly biological control.
- Align academic courses and practical training with labor market demands and encourage student participation in research projects related to local agricultural challenges.

General Goal 3:
To enhance the capabilities of faculty members to achieve academic excellence and ensure institutional quality.

Specific Objectives:

- Embody the vision and mission of the College of Agriculture by applying best educational practices.
- Adopt smart systems to ensure academic quality and improve teaching and institutional performance.
- Encourage faculty members to engage in advanced scientific research in plant protection.
- Involve faculty members in collaboration with local and international academic and cultural institutions to exchange expertise and develop academic programs.

General Goal 4:
To utilize the department's outputs in serving the community and achieving sustainable agricultural development.

Specific Objectives:

- Activate the department's role in transferring knowledge to farmers and agricultural institutions.
- Support joint community projects with local agricultural entities to contribute to solving field problems and provide scientific and technical consultations based on research results and field experiments.

4. Program Accreditation

Does the program have program accreditation? And from which agency? No

5. Other external influences

Is there a sponsor for the program? No

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	4	6	0.04	core

College Requirements	10	19	0.12	core
Department Requirements	44	133	0.84	core
Summer Training	1			core
Other				

* This can include notes whether the course is core or elective.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	**practical**
2nd level/ 1st semester	PLPH220	Plant Physiology	2	3
2nd level/ 1st semester	PLTX217	Plant Taxonomy	2	3
2nd level/ 1st semester	AGEX213	Agricultural Extension	2	-
2nd level/ 1st semester	MICB218	Microbiology	2	3
2nd level/ 1st semester	STAT224	Statistics	2	3
2nd level/ 1st semester	AGEQ232	Agricultural machines and Equipment	2	3
2nd level/ 1st semester	ANPR223	Animal Production	2	3
2nd level/ 1st semester	COMP202	Computer Applications /3	-	3
2nd level/ 1st semester	BACR205	AL Baath Crimes	2	-

2nd level/ 2nd semester	PLNU226	Plant Nutrition	2	3
2nd level/ 2nd semester	INTX212	Insect Taxonomy	2	3
2nd level/ 2nd semester	FICR215	Field Crops	2	3
2nd level/ 2nd semester	MEIN243	Medical and Veterinary Insects	2	3
2nd level/ 2nd semester	ANCH221	Analytical Chemistry	2	3
2nd level/ 2nd semester	ENGL206	English Language / 2	1	-
2nd level/ 2nd semester	COMP203	Computer Applications /4	-	3
3rd level/ 1st semester	BICH330	Biochemistry	2	3
3rd level/ 1st semester	GENE335	Genetics	2	3
3rd level/ 1st semester	DAEX327	Design and Analysis of Experiments	2	3
3rd level/ 1st semester	MYCO315	Mycology 1	2	3
3rd level/ 1st semester	INPH313	Insects Physiology	2	3
3rd level/ 1st semester	PLEC312	Plant Ecology	2	3
3rd level/ 1st semester	ENGL306	English Language /3	1	
3rd level/ 2nd semester	PLBR314	Plant Breeding	2	3
3rd level/ 2nd semester	WECO318	Weeds and Control Methods	2	3

3rd level/ 2nd semester	PLPA319	Plant Pathology	2	3
3rd level/ 2nd semester	MYCO316	Mycology / 2	2	3
3rd level/ 2nd semester	APCU317	Apiculture	2	3
3rd level/ 2nd semester	NEMA320	Nematology	2	3
3rd level/ 2nd semester	BITE342	Biotechnology	2	3
4th level/ 1st semester	CRDS419	Field Crops Diseases	2	3
4th level/ 1st semester	PEST434	Pesticides	2	3
4th level/ 1st semester	INEC413	Insects Ecology	2	3
4th level/ 1st semester	STPE414	Stored Grain Pests	2	3
4th level/ 1st semester	VEDS415	Vegetable and Greenhouse Diseases	2	3
4th level/ 1st semester	BICO416	Biological Control	2	3
4th level/ 1st semester	GRPR421	Graduation Project / 1	-	3
4th level/ 1st semester	ENGL406	English language / 4	1	-
4th level/ 2nd semester	FRDS417	Fruit Diseases	2	3
4th level/ 2nd semester	PLVR418	Plant Viruses	2	3
4th level/ 2nd semester	CRIN412	Field Crops Insects	2	3
4th level/ 2nd semester	AGAC420	Agricultural Acarology	2	3
4th level/ 2nd semester	HOIN424	Horticulture Insects	2	3

4th level/ 2nd semester	IPMA425	Integrated Pest Management	2	-
4th level/ 2nd semester	GRPR422	Graduation Project / 2	-	3
4th level/ 2nd semester	SEMN423	Seminars	1	-

8. **Expected learning outcomes of the program**	
Knowledge	
	• Introduction to the science of insect ecology. • Description of the impact of physical factors on insects. • Description of the impact of --biological factors on insects. • Description of insect food relationships. • Attempt to utilize biological and physical factors in integrated pest management programs.
Skills	
	Developing students' abilities to work within a team to develop and implement plant protection strategies.
	The ability to assess insect environments and understand the extent of environmental factors in pest control, and to research effective and environmentally friendly solutions.
Ethics	

	Adherence to ethical standards and professional responsibility in the use of pest control methods.

9. **Teaching and Learning Strategies**
Lectures: Explaining the fundamental concepts of insect ecology using graphs and presentations. **Discussions**: Posing open-ended questions to encourage students to engage in critical thinking and **analyze information. Case studies**: Discussing real-life examples of the impact of environmental factors on insects. **Presentations**: Assigning students to deliver presentations on specific topics in insect ecology.

10. **Evaluation methods**
Monthly exams, semester reports, and final exams.

11. Faculty						
Faculty Members						
Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of the teaching staff**	
	General	**Special**			**Staff**	**Lecturer**
Prof.	Plant protection	Entomology			**3**	
Assist Prof.		Entomology			**6**	
Lecturer		Entomology			**4**	
Assisst Lect.		Entomology			**4**	
Prof.	Plant protection	Plant Pathology			**1**	
Assist Prof.		Plant Pathology			**5**	
Lecturer		Plant Pathology			**8**	

Assisst Lect.		Plant Pathology			1	
Prof.	Plant protection	Pesticide			1	
Prof.	Plant protection	Biotechnology			1	

Professional Development
Mentoring new faculty members
Participation in specialized scientific courses, conferences, and workshops.
Professional development of faculty members
Teaching and Learning Strategies: Faculty members utilize diverse teaching methodologies tailored to engage students effectively, such as lectures, practical demonstrations, case studies, and fieldwork. **Assessment of Learning Outcomes:** Rigorous assessment methods are employed to evaluate students' comprehension and mastery of course materials. This includes a variety of assessment tools such as exams, quizzes, projects, presentations, and practical assessments. Continuous feedback mechanisms are integrated to guide student progress and identify areas for improvement. **Professional Development:** Faculty members are encouraged to engage in ongoing professional development activities to enhance their expertise and stay abreast of advancements in the field of plant protection. This may involve attending conferences, workshops, seminars, and specialized training sessions relevant to their areas of expertise.

12.	**Acceptance Criterion**

1. Academic Requirements: Specifications regarding minimum academic qualifications, score thresholds of public school for admission into different programs within the College of Agriculture.

2. Application Process: Guidelines outlining the application procedure, including deadlines, required documents (such as transcripts, recommendation letters, and personal statements), and any applicable application fees.

3. Admission Criteria: Criteria for evaluating applicants, which may consider academic performance, and personal statements.

13.	**The most important sources of information about the program**

- College Website: Information provided on the official website of the College of Agriculture, including program descriptions, curriculum details, admission requirements, and contact information.
- College Brochures and Publications: Printed or digital materials distributed by the college that outline program offerings, academic requirements, faculty profiles, and student resources.
- Academic Advisors: Guidance and information provided by faculty members or academic advisors within the College of Agriculture who can offer insights into program structure, course selection, and career opportunities.
- Admission Offices: Details provided by the college's admission offices regarding application procedures, deadlines, required documents, and any specific criteria for admission into the Bachelor of Science in Agriculture program.

- Current Students and Alumni: Insights shared by current students and alumni of the program who can offer firsthand perspectives on their academic experiences, career paths, and the overall quality of education within the College of Agriculture.

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Core or elective	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2nd level/ 1st semester	PLPH220	Plant Physiology	Core	✓							✓			✓	
2nd level/ 1st semester	PLTX217	Plant Taxonomy	Core			✓			✓				✓		

2nd level/ 1st semester	AGEX213	Agricultural Extension	**Core**			✓				✓				✓	
2nd level/ 1st semester	MICB218	Microbiology	**Core**				✓		✓					✓	
2nd level/ 1st semester	STAT224	Statistics	**Core**				✓	✓				✓			
2nd level/ 1st semester	AGEQ232	Agricultural machines and	**Core**		✓					✓			✓		

		Equipment													
2nd level/ 1st semester	ANPR223	Animal Production	**Core**				✓	✓				✓			
2nd level/ 1st semester	COMP202	Computer Applications /3	**Core**	✓				✓				✓			
2nd level/ 1st semester	BACR205	AL Baath Crimes	**Core**	✓							✓			✓	
2nd level/ 2nd semester	PLNU**226**	Plant Nutrition	**Core**			✓			✓				✓		

2nd level/ 2nd semester	INTX212	Insect Taxonomy	**Core**	✓					✓					✓	
2nd level/ 2nd semester	FICR215	Field Crops	**Core**	✓						✓					✓
2nd level/ 2nd semester	MEIN**2**43	Medical and Veterinary Insects	**Core**	✓					✓					✓	
2nd level/ 2nd semester	ANCH221	Analytical Chemistry	**Core**		✓					✓			✓		
2nd level/ 2nd semester	ENGL206	English Language / 2	**Core**	✓							✓				✓

	COMP203	Computer Applications /**4**	**Core**	✓							✓			✓	
3rd level/ 1st semester	BICH330	Biochemistry	**Core**	✓							✓			✓	
3rd level/ 1st semester	GENE335	Genetics	**Core**		✓					✓			✓		
3rd level/ 1st semester	DAEX327	Design and Analysis of Experiments	**Core**	✓				✓				✓			

3rd level/ 1st semester	MYCO315	Mycology 1	**Core**		✓					✓			✓		
3rd level/ 1st semester	INPH313	Insects Physiology	**Core**		✓					✓			✓		
3rd level/ 1st semester	PLEC312	Plant Ecology	**Core**	✓					✓					✓	
3rd level/ 1st semester	ENGL306	English Language /3	**Core**	✓				✓				✓			
3rd level/ 2nd semester	PLBR314	Plant Breeding	**Core**	✓						✓					✓

3rd level/ 2nd semester	WECO318	Weeds and Control Methods	**Core**		✓					✓			✓		
3rd level/ 2nd semester	PLPA319	Plant Pathology	**Core**				✓			✓					✓
3rd level/ 2nd semester	MYCO316	Mycology / 2	**Core**		✓					✓			✓		
3rd level/ 2nd semester	APCU317	Apiculture	**Core**			✓			✓				✓		
3rd level/ 2nd semester	NEMA320	Nematology	**Core**		✓					✓			✓		

	BITE342	Biotechnology	**Core**			✓			✓				✓		
4th level/ 1st semester	CRDS419	Field Crops Diseases	**Core**		✓					✓			✓		
4th level/ 1st semester	PEST434	Pesticides	**Core**				✓			✓					✓
4th level/ 1st semester	INEC413	Insects Ecology	**Core**		✓					✓		✓			
4th level/ 1st semester	STPE414	Stored Grain Pests	**Core**		✓					✓		✓			

4th level/ 1st semester	VEDS415	Vegetable and Greenhouse Diseases	**Core**		✓					✓			✓		
4th level/ 1st semester	BICO416	Biological Control	**Core**		✓					✓		✓			
4th level/ 1st semester	GRPR421	Graduation Project / 1	**Core**		✓					✓		✓			
4th level/ 1st semester	ENGL406	English language / 4	**Core**		✓					✓			✓		

4th level/ 2nd semester	FRDS417	Fruit Diseases	**Core**		✓					✓			✓		
4th level/ 2nd semester	PLVR418	Plant Viruses	**Core**		✓					✓		✓			
4th level/ 2nd semester	CRIN412	Field Crops Insects	**Core**		✓					✓					✓
4th level/ 2nd semester	AGAC420	Agricultural Acarology	**Core**		✓					✓		✓			
4th level/ 2nd semester	HOIN424	Horticulture Insects	**Core**		✓					✓		✓			

4th level/ 2nd semester	IPMA425	Integrated Pest Management	**Core**		✓					✓		✓			
4th level/ 2nd semester	GRPR422	Graduation Project / 2	**Core**		✓					✓					✓
4th level/ 2nd semester	SEMN423	Seminars	**Core**		✓					✓					✓

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

2nd Level

Theoretical Course Description

1. Course Name:	
Plant physiology / Theoretical	
2. Course Code:	
PLPH220	
3. Semester / Year:	
Frist Semester / 2024-2025	
4. Description Preparation Date:	
17/04/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Omar Amer Ibrahim	Email: omar.ibrahem@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	Introduction to Plant Physiology •Definition of plant physiology •Knowledge of solutions and colloidal systems •Knowledge of the general properties of water and food transport • Understanding photosynthesis and respiration
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students will be able to identify solutions and differentiate between their types in general.**	**General introduction to solutions and their types.**	• Theoretical lecture • Presentation • Discussion	Discussion and oral questions
Second	2 hours	**Students will be able to distinguish between the properties of colloidal solutions.**	**Properties of solutions: colloidal**	• Theoretical lecture • Presentation • Discussion	Report on the solutions: colloidal
Third	2 hours	**Students will be able to differentiate between diffusion and osmosis.**	**diffusion and osmosis.**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	**Students will be able to identify balsam and its types.**	**balsam**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Students will be able to differentiate between imbibition and transpiration.**	**imbibition and transpiration.**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	**Students will be able to differentiate between transpiration and absorption.**	**transpiration and absorption.**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	First Monthly Exam	None	None
Eighth	2 hours	**Students will be able to differentiate between water absorption and transport.**	**water absorption and transport.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**Students will be able to differentiate between absorption and transport of nutrients.**	**absorption and transport of nutrients.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Tenth	2 hours	**Students will be able to distinguish between types of plant pigments.**	**Chlorophyll and carotene**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	**Students will be able to differentiate between types of plastids.**	**plastids.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	**Students will be able to distinguish between types of light and dark interactions.**	**light and dark interactions.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	**Students will be able to distinguish between three- and four-carbon plants.**	**three- and four-carbon plants.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None
Fifteenth	2 hours	**Distinguish between the types of respiration in plants**	**respiration in plants**	**• Theoretical lecture • Presentation •Group**	**Discussion and oral questions**

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	Plant Physiology, Part Two (1987). Abdul Azim Kazim and Abdul Hadi Jawad Al-Rayyes.
Online references, websites	

Practical Course Description

1. Course Name:
Plant physiology / Practical
2. Course Code:
PLPH220
3. Semester / Year:
Semester :first / 2023-2024
4. Description Preparation Date:
The first course for the academic year 2023-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
3 Hours / 3 Unite
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: ASSIT. LECTURER AQEELA J. HAJAM Email: **aqeela.hajam@uobasrah.edu.iq**
8. Course Objectives

.... • • ....the student's review of his knowledge about plant physiology..... • .. Need for this information throughout the study period.....	1 The curriculum included a general study on plant physiology 2 Explaining the importance of plant physiology 3 Knowing the most important principles of plant physiology 4- Explaining the most important sciences related to plant physiology.

9. Teaching and Learning Strategies	
Strategy	The modern teaching strategy includes achieving learning objectives in general and teaching plant physiology concepts in particular, and the difficulties that the student faces in understanding and acquiring physiological concepts, and treating difficulties by defining physiological concepts and helping students acquire the correct concepts..

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method

first **second** **third** **fourth** **Fifth** **VI** **Seventh** **VIII** **Ninth** **tenth** **eleventh** **twelveth** **Thirteenth**	**3** **3** **3** **3** **3** **3** **3** **3** **3** **3** **3** **3** **3**		A general idea about plant physiology Comparison between plant cell and animal cell The importance of water in plant life Exam Solutions Spread Imbibition osmosis Feeling the plant Transpiration Breathing Photosynthesis Scientific trip	My presence	Students participate in the lecture through questions coz exam Monthly exams

11. Course Evaluation
Distribution of 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 Sources	
Required Textbooks (Curricular Books, If Any)	Plant physiology book
Main References (Sources)	Plant physiology d. Muayad Fadel Abbas
Recommended Books and References (Scientific Journals, Reports...)	**Scientific journals related to physiology**
Electronic References, Websites	**Internet sites**

Course Description Form

1. Course Name:

Plant Taxonomic
2. Course Code:
PLTX217
3. Semester / Year:
The first course- second stage (-2025-2024)
4. Description Preparation Date:
1/ 10/ 2024
5. Available Attendance Forms:
My presence in Plant Classification Lab.- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total)
5 hours per week - 3 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Name: Abduameer Raheem Obaid Email: abdulameer.obaid@uobasrah.edu.iq
8. Course Objectives

Course Objectives	1- Providing students with theoretical and applied information on methods of classifying plants, taxonomic ranks, and the foundations of plant classification. 2- • Providing students with theoretical and applied information on the structure and parts of various plants.
9. Teaching and Learning Strategies	
Strategy	The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.
10. Course Structure	

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Students' knowledge of classification levels	Fundamentals of Plant Classification and Taxonomic Categories	Lecture with explanation and presentation	Discussions and questions
2	2	Students' knowledge of scientific names divisions of the plant kingdom	Scientific nomenclature - plant classification	Lecture with explanation and presentation	Discussions and quiz
3	2	Teaching students about the roots Morphological of roots- types of roots	The roots Morphological of roots- types of roots	Lecture with explanation and presentation	Discussions and questions
4	2	Students' knowledge Stems - types of stems - modifications of stems The leaf- types of leaves	Stems - types of stems - modifications of stems The leaf- types of leaves- Types of blade in leaves- leaf margins	Lecture with explanation and presentation	Discussions and questions
5	2	Introducing students to leaf mutations	Leaf apex - Leaf vein - Leaf arrangement - Leaf modifications	Lecture with explanation and presentation	Quiz and reports
6	2	Students know the relationship between plants	Angiosperms or Flowering Plants Relationships between Plants	Lecture with explanation and presentation	Discussions and questions

7	2		Exam 1		
8	2	Introducing students to different crops	A field visit to nearby crop fields to learn about plants Flower flower components		Live simple
9	2	Introducing students to Reproductive traits	Reproductive traits	Lecture with explanation and presentation	Discussions and questions + Live simple
10	2	Introducing students to floral oceans	types of flowers and floral oceans	Lecture with explanation and presentation	Discussions and questions
11	2	Students know what tameshim is	Placentation	Lecture with explanation and presentation	Discussions and questions
12	2	Teaching students the floral equation	The floral equation	Lecture with explanation and presentation	Quiz
13	2		Second Exam		
14	2	The student knows the importance of reproduction	Seeds - Classification of seeds- Diagnose and distinguish crop seeds The fruit - types of fruits -	Lecture with explanation and presentation	Discussions and questions

15	2	The student knows the importance of reproduction Students' knowledge of flowering vascular plants	non-flowering vascular plants	Lecture with explanation and presentation	Discussions and questions

11. Course Evaluation	
The final exam consists of 50 theoretical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	1- Plant taxonomy Ali Hussein Issa 2- Principle general plant Abdullah Hamad Al Musawi D. Hussein Ali Al-Saadi
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	Multiple sources related to the classification and division of plants

Practical Course Description

1. Course Name:
Plant taxonomy / Practical
2. Course Code:

3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Enaam Mohammad Hussein Email: enaam.mohammad@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• Identifying different types of plants belonging to various plant families •Using classification key to calcified the plants

9. Teaching and Learning Strategies	
Strategy	• Field visits to survey the types of plants and their density for the crops in the fields.

10. Course Structure

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**

First	3 hours	. **Students will be able to identify the weeds in general**	A general introduction to plant taxonomy	**•Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Oral discussion and questions**
Second	3 hours	**. Students will be able to Identifying the different divisions of the weeds**	**Classification of leaves**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Oral discussion and questions and requesting weed samples**
Third	3 hours	. **. Students will be able to Identifying the different divisions of the weeds**	**The types of Leaf Venation**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, oral questions, and a short exam**
Fourth	3 hours	**. Students will be able to Identifying the different divisions of the weeds**	**Leaves Modification**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, questions and a short quiz**
Fifth	3 hours	**.none**	. **First month exam**	**none**	**none**
Sixth	3 hours	**. . Students will be able to Identifying the different divisions of the weeds**	**The flower**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Oral discussion and questions and requesting insect samples**
Seventh	3 hours	**. Students will be able to Identifying the different divisions of the weeds**	**Flower symmetry**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, questions and a short quiz**
Eighth	3 hours	. **. Students will be able to Identifying the different divisions of the weeds**	**Aestivation**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Oral discussion and questions**
Ninth	3 hours	**.none**	**. Second month exam**	**none**	**none**
Tenth	3 hours	**. Students will be able to Identifying the different divisions of the weeds**	**Floral Leaves**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, questions and a short quiz**
Eleventh	**3 hours**	. **. Students will be able to Identifying the different divisions of the weeds**	**Gynoecial Types**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, questions and a short quiz**
Twelfth	3 hours	**. Students will be able to Identifying the different divisions of the weeds**	**Inflorescencen**	**Practical lecture •Presentation •Group discussion • Display of plant models and images**	**Discussion, questions and a short quiz**

Thirteenth	3 hours	**Students will be able to used the different methods of weeds control**	**The different type of fruits** **The Classification key**		**Discussion, questions and a short quiz**

11. Course Evaluation
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for reports and forms 7.5 points for the first monthly exam 7.5 points for the second monthly exam 20 points for the final exam 40 points total 60 points for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	The classification of plants Author: PHD. Ali Hussein esa The principles of plant classification Author: Prof. Ruqayya Hussein Jasim
Main References (Sources)	**https://share.google/W0PLlqNeuSfebAt1M** **https://youtu.be/5DodmqEpy2c?si=tHDWybLOSPQ4zsNB**

Theoretical Course Description

1. Course Name:
(Agricultural extension) -
2. Course Code:
AGEX213

2. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
. Available Attendance Forms: Attending college within practical microbiology laboratories	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
: Dr.Abdulameer Raheem Obaid Email: : abdulameer.obaid@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• **Learn about agricultural extension science** • **agricultural community and how to apply them**
9. Teaching and Learning Strategies	
Strategy	• **The lesson includes (2) theoretical hours and (3) practical hours - the number of weekly hours approved distributed over 15 weeks.**
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Agricultural extension and its impact on the development of rural communities**	• **Lecture with explanation in presentation**	**Display**
Second	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**The role of agricultural extension in development and combating underdevelopment Agricultural extension – phylsophy and objective**	• **Lecture with explanation in presentation**	**Display**
Third	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and**	**Agricultural extension – phylsophy and objective**	• Lecture with explanation in presentation	**Display**
Fourth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**General principles of agricultural extension**	**Lecture with explanation in presentation**	**Display**
Fifth	2 hours		**Exam1**		
Sixth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Agricultural extension activity and its development The different factors watch effect of Agricultural extension**	**Lecture with explanation in presentation**	**Display**
Seventh	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Agricultural Extension Systems and Organizations**	**Lecture with explanation in presentation**	**Display**
Eighth	2 hours	. **To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Types of Agricultural extension**	**Lecture with explanation in presentation**	**Display**
Ninth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Characteristics of an agricultural guide**	**Lecture with explanation in presentation**	**Display**
Tenth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**agricultural advisor qualifications**	**Lecture with explanation in presentation**	**Display**
Eleventh	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Duties and duties of an agricultural guide**	**Lecture with explanation in presentation**	**Display**

Twelfth	2 hours	. **To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Program planning and evaluation**	**Lecture with explanation in presentation**	**Display**
Thirteenth	2 hours	. **To be able to understand and comprehend the material according to my theory. The ability to repeat the material**	**Principles of planning guidance programs**	**Lecture with explanation in presentation**	**Display**
Fourteenth	2 hours		**Exam2**		
Fifteenth	2 hours	None		•	None

11. Course Evaluation

The final exam consists of 50 theoretical exams, 20 for each monthly exam, 5 POM exams, and 5 reports.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Agricultural extension, part 2 Dr . Abbas Abdul Mohsen
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Theoretical Course Description

1. Course Name:
Microbiology/ Theoretical
2. Course Code:
MICB218
3. Semester / Year:
First Semester / 2024-2025

4. Description Preparation Date:
17/04/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
: **Asst. Prof. Dr. Anaa Dawood Khammass and Inst. Dr.Najlaa Hussein Mohammed** **Email:** anaa.khamas@uobasrah.edu.iq najlaa.mohammed@uobasrah.edu.iq
8. Course Objectives

Course Objectives	1 -Introduce students to the importance of the subject and its implications for daily life and various sciences. 2- Explain the most important modern ideas and advances in modern science. 3- Explain the importance of the subject, especially regarding plant diseases.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**. Introducing students to the concept of microbiology and the history of studying this science**	**Microbiology: Definition - Aspects it includes - Benefits of microbiology**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	**The student will be able to distinguish between the classification of phyla and kingdoms of microorganisms.**	**Classification of microorganisms**	• Theoretical lecture • Presentation • discussion	Report on the damage of pathogens on the plants

Third	2 hours	Students will also be able to learn about the shapes and sizes of bacteria.	**-Completion of microbiology classification - Shapes and groupings of bacterial cells - Size of bacterial cells**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	Providing studentswith information about the nature of bacterial cells and their physiological structure.	. - Cellular structure of bacterial cells - Basic components of a bacterial cell - Non-essential components of a bacterial cell	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	Providing students with information to understand the environmental needs of bacteria and how environmental conditions affect them.	The effect of environmental factors on bacterial growth: temperature, humidity, and pH . Bacterial growth curve	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	Introducing students to the most important genera of plant-pathogenic bacteria and their characteristics.	genera that are Phytopathogenic bacteria - The most important symptoms they cause - The most important pathogenic to plants.	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	First exam	None	None
Eighth	2 hours	Introduce students to the most important types of plant-pathogenic viruses and their characteristics.	Plant-pathogenic viruses, their genera, and the most important symptoms they cause.	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	Define bacteriophages.	Bacteriophages	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	. Identify protists and fungi, their types, and the diseases they cause.	Eukaryotes and some protists and fungi	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eleventh	2 hours	Identify the importance of fungi and their genera, both beneficial and disease-causing.	Economic importance of fungi	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	. . Identify the most important phyla, classes, orders, and families of fungi	Classification of the Kingdom of Fungi	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Identify the most important plant diseases that affect different plant families.	The most important plant-pathogenic fungi	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second exam	None	None

Fifteenth	2 hours	None	General review	•Theoretical lecture • Presentation •Group discussion	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Microbiology book
Main References (Sources)	Classification of the world of plants and microorganisms 2018
Online references, websites	

Practical Course Description

1. Course Name:	
Microbiology/ Practical	
2. Course Code:	
MICB218	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
18/04/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 3.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name Lecture; Hazim Sabah Rahmah E-Mail: hazim.rahmah@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Enable students to understand the basic principles of microbiology, including the different types of microorganisms, their functions, and their importance in life. • Enable students to apply the theoretical concepts they learned in lectures to practical experiments. • Develop students' skills in using laboratory tools such as microscopes, preparation methods, and experimental techniques. • Teach students the importance of laboratory safety and following ethical rules in scientific research. • Enhance their ability to observe microorganisms and analyze results. • Encourage students to explore further microbiology through experiments and research projects.
9. Teaching and Learning Strategies	

Strategy	• Practical lectures in classroom laboratories. • Presentations and demonstrations of fungal models, their forms, and stages under the microscope. • Group discussions. • Problem-based learning, inquiry, and brainstorming. • Report-based learning and projects.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Introducing students to the conditions and duties that must be observed in the microbiology laboratory.	General guidelines and conditions that must be met and observed in the microbiology laboratory	•Practical lecture •Presentation •Group discussion • models and images	Oral discussion and questions
Second	3 hours	Training students on how to isolate and sterilize	Culture media used in microbial isolation and sterilization methods	•Practical lecture •Presentation •Group discussion	Oral discussion and questions
Third	3 hours	Training students on how to prepare a bacterial smear and use stains	Bacterial cell staining	•Practical lecture •Presentation •Group discussion • models and images	Discussion, oral questions, and a short exam
Fourth	3 hours	Training students on how to stain specific parts of a bacterial cell.	Staining of bacterial cell parts	•Practical lecture •Presentation •Group discussion • models and images	Oral discussion and questions and requesting samples
Fifth	3 hours	Training students on the methods used in isolating microorganisms	Methods of isolating and culturing microorganisms on pure	•Practical lecture •Presentation •Group discussion	Oral discussion and questions and requesting
Sixth	3 hours	None	First Monthly Exam	None	None
Seventh	3 hours	Train students on the methods used to test the motility of live bacteria and observe their movement through the microscopic field.	Bacterial motility test	Practical lecture •Presentation •Group discussion •Display models and images	Oral discussion and questions and samples
Eighth	3 hours	How to calculate the total number of bacteria	Calculate the total number of bacteria	Practical lectur • Presentation • Group discussion • Display models and images	Oral discussion and questions
Ninth	3 hours	Water is tested to determine its suitability for human consumption, especially to ensure	Water bacteriology	Practical lectur • Presentation	Discussion, questions and a short quiz
Tenth	3 hours	Knowledge of fungi and their types	Kingdom of Fungi	Practical lectur •Presentation •Group discussion • Display fungi models and images	Discussion, oral questions, and bringing models

Eleventh	3 hours	Introducing students to the types of bacteria that infect plants	Some types of bacteria that infect plants	Practical lectur • Presentation • Group discussion • models and images	Discussion, questions and a short quiz
Twelfth	3 hours	None	Second Monthly Exam	None	None
Thirteenth	3 hours	None	General Review	• Group discussion Answering students' questions	None

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc.
5 points for reports and forms
7.5 points for the first monthly exam
7.5 points for the second monthly exam
20 points for the final exam
40 points total
60 points for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Internet
Main References (Sources)	

Theoretical Course Description

1. Course Name:	
Statics theory	
2. Course Code:	
STAT224	
3. Semester / Year:	
first Semester / 2024-2025	
4. Description Preparation Date:	
18/5/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Faisal NasserJaber	Email: : faisal.nasser@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Understand the fundamental principles of collecting and analyzing statistical data. • • Apply appropriate statistical methods to analyze scientific and agricultural data. • • Interpret the results of statistical analysis and use them to make evidence-based decisions..
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or Subject Name	Learning Method	Assessment Method
1	2	Understand the basic types of data	Introduction to Statistics and Data Types	• • Lecture + Discussion	Quiz
2	2	Skill in data collection and organization	Data Collection and Organization	• • Practical Exercises	Homework
3	2	Calculate descriptive measures (central tendency and dispersion)	Descriptive Statistical Measures	• • Lecture + Exercises	Quiz
4	2	Graphical data representation	Charts and Data Visualization	• Workshop	Practical Evaluation
5	2	Understand basic probability concepts	Introduction to Probability	• Lecture	Quiz
6	2	Knowledge of main probability distributions	Probability Distributions	• Lecture + Discussion	Homework
7	2	Understand sampling methods	Sampling and Sampling Techniques	• Lecture + Exercises	Quiz
8	2	Apply confidence interval estimation	Statistical Inference: Confidence Intervals	• Workshop	Practical Evaluation

9	2	Understand hypothesis testing (Part 1)	Hypothesis Testing (Part 1)	• Lecture + Exercises	Quiz
10	2	Complete hypothesis testing	Hypothesis Testing (Part 2)	• Lecture + Discussion	Quiz
11	2	Analyze qualitative data	Statistical Analysis of Qualitative Data	• Workshop	Practical Evaluation
12	2	Calculate correlation and regression	Correlation and Simple Regression	• Lecture + Exercises	Homework
13	2	Understand and analyze variance	Analysis of Variance (ANOVA)	• Lecture + Workshop	Quiz
14	2	Use statistical software	Using Statistical Software	• Practical Training	Mini Project
15	2	General review and practical applications	General Review and Applications	• • Discussion + Problem Solving	

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Theoretical Course Description

1. Course Name:	
Statistic (theory)	
2. Course Code:	
STAT224	
3. Semester / Year:	
first Semester / 2024-2025	
4. Description Preparation Date:	
18/5/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Faisal NasserJaber	Email: : faisal.nasser@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Understand the fundamental principles of collecting and analyzing statistical data. • • Apply appropriate statistical methods to analyze scientific and agricultural data. • • Interpret the results of statistical analysis and use them to make evidence-based decisions..
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or Subject Name**	**Learning Method**	**Assessment Method**
1	2	Understand the basic types of data	Introduction to Statistics and Data Types	• • Lecture + Discussion	Quiz
2	2	Skill in data collection and organization	Data Collection and Organization	• • Practical Exercises	Homework
3	2	Calculate descriptive measures (central tendency and dispersion)	Descriptive Statistical Measures	• • Lecture + Exercises	Quiz
4	2	Graphical data representation	Charts and Data Visualization	• Workshop	Practical Evaluation
5	2	Understand basic probability concepts	Introduction to Probability	• Lecture	Quiz
6	2	Knowledge of main probability distributions	Probability Distributions	• Lecture + Discussion	Homework
7	2	Understand sampling methods	Sampling and Sampling Techniques	• Lecture + Exercises	Quiz
8	2	Apply confidence interval estimation	Statistical Inference: Confidence Intervals	• Workshop	Practical Evaluation
9	2	Understand hypothesis testing (Part 1)	Hypothesis Testing (Part 1)	• Lecture + Exercises	Quiz
10	2	Complete hypothesis testing	Hypothesis Testing (Part 2)	• Lecture + Discussion	Quiz

11	2	Analyze qualitative data	Statistical Analysis of Qualitative Data	• Workshop	Practical Evaluation
12	2	Calculate correlation and regression	Correlation and Simple Regression	• Lecture + Exercises	Homework
13	2	Understand and analyze variance	Analysis of Variance (ANOVA)	• Lecture + Workshop	Quiz
14	2	Use statistical software	Using Statistical Software	• Practical Training	Mini Project
15	2	General review and practical applications	General Review and Applications	• • Discussion + Problem Solving	

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Practical Course Description

1. Course Name:	
Statistic / Practical	
2. Course Code:	
STAT224	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Faisal NasserJaber	Email: : faisal.nasser@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Teach students the engineering aspects of aquaculture systems. • Teach students the basic aspects of aquaculture farm design. • Teach students the basic aspects of aquaculture hatchery design. • Teach students the basic concepts of establishing and managing earthen ponds, cages, recirculating aquaculture system, aquaponics and biofloc systems. • Teach students the engineering aspects of automated feeding systems. • Teach students on the nature and types of basic materials and equipment used in aquaculture systems.
9. Teaching and Learning Strategies	

Strategy	• Practical lectures in the laboratory and field visits.. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Students will be able to identify the basic aspects of aquaculture engineering.	General introduction Review the most important engineering matters related to aquaculture farms.	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Second	3 hours	Students will be able to differentiate between production units in aquaculture	Classification of production units Review examples of production units according to classifications based on density, control, location of farming, etc.	• Practical lecture • Presentation • Group discussion	Quick test Students identify the appropriate type for a group of production units mentioned in the questions
Third	3 hours	Students will be able to design and construct earthen ponds and handle the equipment and supplies for them.	Design and construction of earthen ponds 1 Design ponds on paper or using computer programs. Determine the cross-section of the plug. Calculate the amounts of soil that need to be added or removed. Determine the area and method of constructing the fish collection pit, drainage gates, supply channels and their requirements. Review and identify the equipment used in supplying and draining water. Review and identify the equipment used in aerating the ponds. Calculate the amounts of water needed and the time period for filling and draining the ponds.	• Practical lecture • Presentation • Group discussion	Solving practical problems
Fourth	3 hours	Students will be able to design and construct earthen ponds.	Design and construction of earthen ponds 2 Field visit to the fish ponds at the Al-Hartha Station farm or to one of the fish farms in the governorate.	• Explanation by the subject teacher • Explanation by the farm management	Discussion between students and between them and the subject teacher or farm management

Fifth	3 hours	Students will be able to identify the materials used and how to handle them for cage construction.	Design and construction of cages 1 Choose the appropriate location for the cages and the conditions that must be met. Review the materials used in the manufacture of cages and the advantages and disadvantages of each. Learn about the methods of constructing cages and the tools used in them. Determine the culture densities that can be used depending on the water specifications, location and type of fish.	• Practical lecture • Viewing samples of materials and equipment • Performing calculations using mathematical methods	Solving practical problems
Sixth	3 hours	Students will be able to identify the materials used and how to handle them for cage construction.	Design and construction of cages 2 Field visit to one of the cage farm sites in the governorate. Or practical application to create miniature model cages.	• Explanation by the subject teacher • Explanation by the farm management in the event of a field visit	Discussion between students and between them and the subject teacher or farm management in the event of a field visit or evaluation of models prepared by students
Seventh	3 hours	None	First monthly exam	None	None
Eighth	3 hours	Students will be able to identify the materials used and how to handle them for recirculating aquaculture system.	Design and construction of recirculating aquaculture system Review the basic components of the system including tanks and their types, water pipes and their types, mechanical and biological filters and their types, water sterilization devices, water oxygen supply devices, materials used to get rid of chemical compounds and regulate pH, calculate culture densities.	• Practical lecture • Presentation • Video	Discussion and oral questions
Ninth	3 hours	Students will be able to identify the basics of designing and constructing an aquaponic system.	Design and construction of an aquaponic system Review the basic components of the system including tanks and their types, water pipes and their types, mechanical and biological filters and their types, water sterilization devices, water oxygen supply devices, materials used to get rid of chemical compounds and regulate pH, types of plant culture platforms and materials used in them, calculate fish and plant culture densities and their types within the system.	• Practical lecture • Presentation • Video	Discussion and oral questions

Tenth	3 hours	Students will be able to identify the basics of operating a biofloc system.	Operation of the biofloc system Identify the equipment and tools used in the system. Identify the microorganisms used and how to prepare them for addition to the system. Identify the methods used to monitor water properties and microorganism densities within the system. Field visit to the department's aquaponics system and compare it with the closed system and the biofloc system.	• Practical lecture • Presentation • Video	A report discussing the system that is most suitable for the local environment and the most feasible for application and use among closed, aquaponic and biofloc farming systems locally
Eleventh	3 hours	Students will be able to identify the engineering aspects of automatic feeding	Automated feeding systems Learn about modern automated feeding systems and the basics of their work and the materials and techniques used in their manufacture and operation.	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	3 hours	Students will be able to identify methods and equipment for transporting live fish.	Live fish transport Learn about the methods of transporting live fish and the equipment and supplies related to them and their differences according to the type, size and number of fish transported.	• Practical lecture • Presentation • Video	Assigning students to transport a group of live fish by different means
Thirteenth	3 hours	Students will be able to learn the basics of monitoring devices and follow up on the specifications of the water used for cultivation.	Devices and monitoring Learn about the basic components of measuring devices, review water specification measuring devices, water speed and quantity measuring devices, water pressure loss and leakage measuring devices, water level determination devices, fish counting devices, system monitoring equipment and software, and how to use each one.	• Practical lecture • Presentation • Video	Discussion and oral questions
Fourteenth	3 hours	None	Second monthly exam	None	None
Fifteenth	3 hours	None	General review	• Group discussion • Answering students' inquiries	None

11. Course Evaluation

Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 20 marks for the final exam 40 marks total 60 marks for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	1. Al-Rawi, Khashi'. (2006). *Principles of Statistics and Its Applications in Agricultural Sciences*. Dar Al-Kutub for
Recommended Books and References (Scientific	• Montgomery, D.C., & Runger, G.C. (2018). *Applied Statistics and Probability for Engineers* (7th ed.). Wiley.
Electronic References, Websites	○ https://www.khanacademy.org/math/statistics-probability

Course Description Form

1. Course Name:
Machines and equipment
2. Course Code:
3. Semester / Year:
Autumn/ 2023−2024
4. Description Preparation Date:
14/ 02/ 2024
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
75h (5h weekly)
7. Course administrator's name (mention all, if more than one name)
Name: Ali Husien Awad Email: ali.awad@uobasrah.edu.iq

8. Course Objectives	
The course aims to introduce the student to all the equipment and machines that It is used to combat agricultural fields by mechanical and automatic methods.	**● Discussing control methods ● The relationship of spraying to the characterist of the cultivated plant ● Factors for the success of the control process**

9. Teaching and Learning Strategies	
Strategy	1 Education strategy collaborative concept planning.

	2. Brainstorming education strategy. 3. Education Strategy Notes Series.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Field observations of puller and their types	Machines and equipment	Explaining the scientific material through the use of the display screen and giving the most important recommendations necessary for apply spraying during control. 2. Write a review paper for each instrument summarizing the m important points raised during the lectures 3. Linking ideas, theories, and laws t reach the best meth when applying cont in the field	Weekly, monthly, daily, written ar end-of-semeste exams.
2	5	Moldboard plow			
3	5	Disc plow			
4	5	Digger and rotary plow			
5	5	Animal manure spreader			
6	5	Chemical fertilizer distributors			
7	5	Fertilization equipment wit liquid and gaseous fertilize			
8	5	Grain seeds and their organization			
9	5	Farming equipment on line Aldayat seedlings			

10	5	Pumps			
11	5	Sprinkler irrigation equipment			
12	5	Weed control equipment			
13	5	Machines for thinning plant mechanically			
14	5				
15	5	Sprays and dusters			

11. Course Evaluation

Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Alheidary, M. H. R., 2023. Plant Protection Equipment, Basrah University Press. 391.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Animal Production	
2. Course Code:	
ANPR123	
3. Semester / Year:	
First semester / First semester	
4. Description Preparation Date:	
1/2/2024	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours (2 hours theoretical 3 hours practical) Number of Units (3.5)	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Prof. Dr. majid Hassan alasadi Email: majid.hassan@uobasrah.edu.iq Lacturar Zainab Ali Kadem Email : zainab.kadem@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	Enables the student to gain knowledge: 1- The importance of the science of the principles of animal production, which deals in detail with the economic importance of livestock and types of global and local livestock, and their management and care. 2- Studying the types and importance of other farm animals such as buffaloes, sheep and goats, and their management and care.

9. Teaching and Learning Strategies	
Strategy	A) This course aims to develop students' critical thinking skills and analytical abilities about the intellectual framework of the subject of Principles of animal production. B) This course aims to enable students to examine and analyse various topics related to the breeding of animal, including the different types of animal and the most important projects related to their breeding. C) This course aims to help students identify administrative problems that may be encountered in animal fields and develop strategies to address them. D) This course aims to encourage students to think critically and analyse

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	5	Introducing students to general information about animal productionIts economic and nutritional importance	A general introduction to animal production and its importance	Lectures Theoretical and practical + Display methods +Dialogue and discussion	the exams Daily and monthly And final reports Daily
2	5	Introducing students to the factors affecting production efficiency and	Factors affecting the production efficiency of farm animals	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports

3	5	Explain and clarify the obstacles facing livestockand ways to improve it	Obstacles facing animal production in Iraq and ways to improve them	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
4	5	Introducing students to livestock, their types, and how to care for them	Cattle classification - global dairy cows - management and care	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
5	5	Introducing students to dual-purpose cattle and local and international	Dual-purpose cows - Iraqi cows - International breeds of sheep and goats	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
6	5	Introducing students to how to establish a herd of sheep and goats and care for them	Establishing and managing a flock of sheep and goats	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
7	5	Introducing students to the specifications of international and local buffalo and their different	Buffalo - general characteristics of buffalo - physiological characteristics - breeds of buffalo.	Lectures Theoretical and practical + Display methods +Dialogue	the exams Daily and monthly And final reports Daily
8	5	Introducing students to the importance of poultry projects and meat and egg production	Poultry birds - the economic importance of poultry projects - the production of eggs and meat -	Lectures Theoretical and practical + Display methods +Dialogue	the exams Daily and monthly And final reports Daily

9	5	Introducing students to fodder materials for farm animals and how	Nutrition and feed Preparing animal feed.	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
10	5	Explanation and clarification of health programs for animals, how to prevent	Health care for agricultural animals.	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
11	5	A detailed explanation of the importance of raising calves and	The importance of raising calves and heifers in cow fields.	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
12	5	Introducing students to the reproductive system of cows, the importance of	The physiology of reproduction and artificial insemination.	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
13	5	Introducing students to animal breeding and improvement and	Genetic improvement in poultry.	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
14	5	A detailed explanation of the importance of camels and the equine species and	Other agricultural animals - camels - their management and care.	Lectures Theoretical and practical + Display methods	the exams Daily and monthly And final reports
15	5		Exame		
11. Course Evaluation					

- Daily exams with multiple-choice questions that require scientific skills.
- Daily exams with scientific questions.
- Participation grades for competition questions for academic subjects.
- Marking homework and reports
- - Grades for the student's activity during the lecture and the extent of his commitment to regular attendance and absence.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Basics of animal production, written by A. Dr.. Ahmed Suleiman Mahmoud and A. Dr.. Mahmoud Riyad Al Mahdi (2013)
Main References (Sources)	1 -Principles of animal production, written by Dr. Muzaffar Nafie Al-Sayegh - Dr. Taha Jassem Al-Taha - Dr. Suhaib Saeed Alwan Al-Zubaidi (1987) (methodical book). 2- Al-Zubaidi, Suhaib Saeed Alwan (1986). Poultry management. Basra University
Recommended Books and References (Scientific Journals, Reports...)	- Various classification research and university Theses for principles domestic birds - Relevant information available on the Internet.
Electronic References, Websites	https://nicehatchincubators.com/the-principles-of-poultry-husbandry/

Theoretical Course Description

1. Course Name:
Computer Basics / Theoretical
2. Course Code:
COMP201
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)

Two hours/ unitsECTS
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Assoc. Prof. Mujtaba Abdel Wahab Taher Email: mujtaba.tahir@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• Teach students the basic concepts of the computer and its various components. • Introduce students to different operating systems and software types. • Teach students the skills of using word processing software, spreadsheets, and presentations. • Teach students how to deal with Internet networks and information security. • Teach students the basics of computer maintenance and fault prevention.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures inside the classroom to explain basic concepts. • Presentations and video materials to illustrate practical applications. • Group discussions to enhance understanding and exchange of experiences among students. • Problem-based learning and inquiry to develop critical thinking skills. • Learning-based reporting and applied projects to enhance practical skills.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students are able to define the computer and its basic components and functions.**	**Introduction to computers and its types**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**

Second	2 hours	**Students are able to distinguish between different operating systems and their functions.**	**Operating Systems**	**• Theoretical lecture • Presentation • Group discussion**	**Oral quiz**
Third	2 hours	**Students are able to use word processing software and create simple documents.**	**Word Processing**	**• - Practical lecture • -Presentation • -Hands**	**Practical duty**
Fourth	2 hours	**Students are able to use spreadsheets to create and analyze data.**	**Spreadsheets**	**• - Practical lecture • -Presentation -Hands**	**Small Project**
Fifth	2 hours	**Students are able to create effective presentations using presentation software.**	**Presentations**	**• - Practical lecture • -Presentation -Hands**	**Oral presentation**
Sixth	2 hours	**Students will be able to understand the basics of computer peripherals.**	**Paint Program**	**• Theoretical lecture • Presentation • Group discussion Video**	**Design of different shapes project**
Seventh	2 hours	**None (mid-term test)**	**Mid-term exam**	**There isn't any**	**Written test**
Eighth	2 hours	**Students will be able to understand the basics of the Internet.**	**Internet**	**• Theoretical lecture • Presentation • Group discussion Video**	**Discussion and oral questions**
Ninth	2 hours	**Students will be able to explain the concepts of computer security and file protection.**	**Computer protection**	**• Theoretical lecture • Presentation • Group discussion Video**	**Research Report**
Tenth	2 hours	**Students are able to use computer programs to organize and analyze data.**	**Excel**	**• - Practical lecture • -Hands - Brainstorming**	**Applied Project**
Eleventh	2 hours	**Students will be able to understand the basics of data inclusion and management.**	**Excel**	**• Theoretical lecture • Presentation • Group discussion Video**	**Written test**
Twelfth	2 hours	**Students are able to maintain the computer and prevent common malfunctions.**	**Computer Maintenance**	**• - Practical lecture -Hands**	**Discussion and oral questions**

Thirteenth	2 hours	**Students are able to review and summarize the content of the material and prepare for the final exam.**	**General Review**	**• - Group discussion - Answering students' inquiries**	**There isn't any**
Fourteenth	2 hours	**There isn't any**	**Second Monthly Exam**	**There isn't any**	**There isn't any**
Fifteenth	2 hours	**None (Final Test)**	**Final Exam**	**• There isn't any**	**Comprehensive Test**

11. Course Evaluation
Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 10 marks for the first monthly exam 10 marks for the second monthly exam 30 marks for the final exam Total 60 marks 40 marks for the practical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Bahith, Al-Khidr Ali Al-Khidr (2020) Computer and Software Fundamentals . Al-Hajj , Ahmed Mohamed Ibrahim Mohamed, (2013) Learning Computer Basics, Noor Library
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	https://alison.com/tag/computer-skills

Practical Course Description

1. Course Name:
Computer Basics / Lab
2. Course Code:

COMP201	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
One hour/one ECTS	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Assoc. Prof. Mujtaba Abdel Wahab Taher Email: mujtaba.tahir@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Training students on computer operation and practical identification of its physical components (Hardware and its various parts). • Enable students to use an operating system (such as Windows) to manage files and folders and perform basic tasks. • Teach students the skills of using word processing programs (Word), spreadsheets (Excel), and presentations (PowerPoint) in practice. • Training students to use the Internet and electronic communication tools in a safe and effective manner. • Teach students how to install basic software, maintain computers, and prevent viruses and electronic intrusions. • Develop students' skills in preparing reports and practical projects using the computer and its
9. Teaching and Learning Strategies	

Strategy	• The strategy of practical demonstration by providing a direct practical explanation of the basic skills, with an explanation of the steps of carrying out tasks on the computer in front of students inside the laboratory. • A self-learning strategy by encouraging students to explore programs and applications on their own, while providing educational resources and support. • Project learning strategy by assigning students to practical projects that require the use of various computer skills, such as preparing documents, spreadsheets, or presentations. • Guided discovery strategy by guiding students to discover new solutions and skills through guided questions and practical experiments within the laboratory.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	**1hr**	**Students should be able to operate the computer and learn about its physical and software components practically.**	**Learn about computer components and operation**	**• - Practical application in the laboratory • - Physically explore the computer**	**Direct Note + Oral Questions**
Second	**1hr**	**Students should be able to use the operating system (Windows) in basic tasks (run, close, manage files).**	**Dealing with the operating system**	**• - Practical computer training • - Perform file management tasks**	**Short practical test**
Third	**1hr**	**Students be able to create and format a text document using softwareWord.**	**Word processing (Word)**	**• - Practical application on Word • - Perform text editing exercises**	**Practical assignment (Word file delivery)**
Fourth	**1hr**	**Students be able to create simple spreadsheets and perform calculations using Excel.**	**Spreadsheets (Excel)**	**• - Practical application on Excel • - Perform data entry exercises and formulas**	**Small Project (Excel File)**
Fifth	**1hr**	**Students be able to prepare a presentation usingPowerPoint.**	**Presentations (PowerPoint)**	**• - Practical application on PowerPoint • - Slide design and presentation**	**Make an oral presentation (PowerPoint file)**
Sixth	**1hr**	**Students should be able to use paint software or simple drawing software to create shapes and designs.**	**Simple drawing programs**	**• - Practical application on the paint program • - Implement simple drawings**	**Design Project (image file)**
Seventh	**1hr**	**There isn't any**	**Mid-term Exam (Practical)**	**Applied testing in vitro**	**Comprehensive practical test**
Eighth	**1hr**	**Students should be able to use an internet browser to search for information and send an email.**	**Use of the Internet and Email**	**• - Practical application on the Internet • - Send and receive email**	**Live Note + Electronic Assignment**

Ninth	**1hr**	**Students should be able to set up a strong password, and protect files from viruses and hacks.**	**Computer Security and File Protection**	• **- Practical application of protection programs** • **- Set up passwords**	**Short Practical Report**
Tenth	**1hr**	**Students should be able to use Excel Or other software to analyze simple data and display it graphically.**	**Analyze data using Excel**	• **- Practical application to data analysis** • **- Create graphs**	**Applied project (Excel file)**
Eleventh	**1hr**	**Students should be able to enter and manage data in electronic .spreadsheets**	**Data Management (Excel)**	• **- Practical application on data entry and filtering** • **- Use sorting tools**	**Short practical test**
Twelfth	**1hr**	**Students should be able to perform simple computer maintenance steps (cleaning, virus scanning, software**	**Basic Computer Maintenance**	• **- Practical training on computer maintenance** • **- Use of protection software**	**Direct Note + Oral Questions**
Thirteenth	**1hr**	**Students should be able to review and summarize the practical skills they learned during the class.**	**General review of practical skills**	• **- Group discussion** • **- Various practical applications**	**There isn't any**
Fourteenth	**1hr**	**There isn't any**	**Second monthly test (practical)**	**Applied testing in vitro**	**Comprehensive practical test**
Fifteenth	**1hr**	**There isn't any**	**Final exam (practical)**	• **Applied testing in vitro**	**Comprehensive practical test**

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam
40 marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Bahith, Al-Khidr Ali Al-Khidr (2020) Computer and Software Fundamentals . Al-Hajj , Ahmed Mohamed Ibrahim Mohamed, (2013) Learning Computer Basics, Noor Library

Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	https://alison.com/tag/computer-skills

Theoretical Course Description

1. Course Name:
Plant nutrition
2. Course Code:
PLNU426
3. Semester / Year:
second semester / second stage / 2024-2025
4. Description Preparation Date:
02/06/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
5 hours (2 Theoretical and 3 practical) 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name Rashad Adel Imran Email : rashad.imran@uobasrah.edu.iq Name:Hanan abdulwahhab saeed hanan.saeed@uopbasrah.edu.iq: e-mail
8. Course Objectives

Course Objectives	• Identify the importance of nutrients for plant growth and increasing its productivity. • Identify the physiological functions of each nutrient, the symptoms of its deficiency and how to treat it. • Studying the factors affecting the availability of nutrients.

9. Teaching and Learning Strategies

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**The student will have knowledge of the benefits of nutrients and their arrangement according to their importance for plant growth.**	**The importance of plant nutrition and the division of nutrients.**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	**The student will be able to create nutritional media for plant growth according to the age and type of plant.**	**Plant nutrition media_ nutrition and plant growth_ The relationship of plant growth with time.**	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	**The student understands how nutrients reach the root and is able to solve problems that reduce nutrient availability to the plant.**	**Plant nutrition media_ nutrition and plant growth_ The relationship of plant growth with time.**	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	**The student will be aware of how nutrients enter plant tissues.**	**Theories of nutrients absorption by plants**	• Theoretical lecture • Presentation • Group discussion Video	Earth pond design project

Fifth	2 hours	**The student will be able to solve environmental problems that hinder nutrient uptake and plant growth.**	**External and internal factors affecting plant growth.** **The role of hormones in the growth and development of grains.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Sixth	2 hours	none	**First exam**	none	none
Seventh	2 hours	**The student will be able to distinguish between the importance of vegetative and root growth and their relationship to plant growth according to its**	**Hypotheses to explain the relationship between root and stem growth.**		
Eighth	2 hours	**The student will be able to determine the concentration of nutrients that gives the best plant growth.** **.**	**The relationship between the rate of nutrient absorption and ion concentration in solution.** **The importance of Michaelis constant and its derivation**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**The student will be able to identify the mechanism of absorption of each element and determine the type of absorption (active or passive absorption).**	**Mechanisms of bio-absorption of nutrients.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	. **The student understands the behavior of each nutrient within plant tissues.**	**Theories of ion crossing the plasma membrane.**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	.**The student will be able to distinguish the effect of each element on the absorption of other elements, whether negative or positive, and how to eliminate the problem of antagonism between nutritional elements.**	**Selectivity of nutrient absorption.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	**The student understands the behavior of water inside the plant and the factors affecting it, and has the ability to create suitable conditions to reduce water loss from the plant**	**Water relations in plants.** **Mechanics of water movement within plants.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	None	**second examn.**	**None**	None

Fourteenth	2 hours	**The student will have knowledge of the behavior of nitrogen and sulfur within the plant to build amino acids and protein.**	**Nitrogen and sulfur immobilization in plant tissuese.**	• lecture • Presentation • Group discussion Video	Discussion and oral questions
Fifteenth	2 hours	**Micronutrients and their deficiency symptoms in plants**	**Micronutrients and symptoms of their deficiency in plants.**	• Group discussion • Answering students' questions	None

11. Course Evaluation
Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 10 marks for the first monthly exam 10 marks for the second monthly exam 30 marks for the final exam Total 60 marks 40 marks for the practical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Plant Nutrition Guide, 1989. Yousef Mohammed Abu Dahi and Mu'ayyad Ahmed Al-Younis. Ministry of Higher Education and Scientific Research.
Main References (Sources)	Mengel, K. and E. A. Kirby,1984
Recommended Books and References (Scientific Journals, Reports...)	Plant Nutrition and Soil Fertility Manual. Benton Jones Jr
Electronic References, Websites	Scientific articles published on the ResearchGate platform

Practical Course Description

1. Course Name:
Plant nutrition
2. Course Code:
PLNU426
3. Semester / Year:

second semester / second stage / 2024-2025
4. Description Preparation Date:
02/06/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:Hanan abdulwahhab saeed hanan.saeed@uopbasrah.edu.iq: e-mail
8. Course Objectives

Course Objectives	• Understanding the importance of essential nutrients for plant growth and increasing productivity. • Identifying the symptoms on plants resulting from the deficiency of each nutrient. • Knowing how to treat nutrient deficiencies through nutrient solutions or by adding appropriate fertilizers. • Applying the knowledge gained through sand and hydroponic farming experiments, monitoring plant performance, and analyzing the impact of nutrient deficiencies on plant growth.
9. Teaching and Learning Strategies	
Strategy	• Practical lectures in the laboratory and field visits. • Presentations and video materials. • Group discussions. • Problem-solving, inquiry-based learning, and brainstorming. • Report-based learning and daily exams. .
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	The student should have the knowledge of how toprepare nutrient solutions suitable to meet the plant's needs.	Preparing Nutrient Solutions	Presentation - Group discussion Video presentations explaining the lecture with preparation of materials and nutrient solutions	-
Second	3 hours	The student should have the ability to prepare nutrient solutions correctly and apply them to meet the plant's needs, ensuring the success of the agricultural experiment.	Sand and Hydroponic Farming Experiment.	Presentation- Group discussion-Video presentations.	• Daily exam
Third	3 hours	The student should be able to understand the deficiency symptoms of plant nutrients and follow appropriate solutions by analyzing the symptoms of each nutrient.	Nutrient Deficiency Symptoms, Diagnosis, and Treatment- Nitrogen: Physiological functions, diagnosing deficiency symptoms, and treatment.	Presentation Group iscussion Video presentations	Daily exam
Fourth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency.	Phosphorus: Physiological functions, diagnosing deficiency symptoms, and treatment.	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Daily exam
Fifth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency.	Potassium: Physiological functions, diagnosing deficiency symptoms , and treatment.	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Submitting a report to monitor the plant in both sand and hydroponic farms.

Sixth- Seventh	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency..	Calcium and Magnesium: Physiological functions, diagnosing deficiency symptoms, and treatment.	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Oral question
Eighth	3 hours	None	First monthly exam	None	None
Ninth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency..	Sulfur: Physiological Functions, Diagnosing Deficiency Symptoms, and Treatment	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Daily exam
Tenth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency..	Iron: Physiological Functions, Diagnosing Deficiency Symptoms, and Treatment	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Oral question
Eleventh	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency..	Manganese: hysiological Functions, Diagnosing Deficiency Symptoms, and Treatment.	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Submitting a report on nutrient deficiency symptoms
Twelfth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address thenutrient deficiency..	Zinc: Physiological Functions, Diagnosing Deficiency Symptoms, and Treatment.	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Daily exam

Thirteenth	3 hours	None	Second monthly exam	• None	None
Fourteenth	3 hours	The student should be able to diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency..	Copper: Physiological Functions, Diagnosing Deficiency Symptoms, and Treatment	Presentation Group iscussion Video - presentations Diagnosing - deficiency symptoms of the nutrient.	Submitting a report on nutrient deficiency symptoms
Fifteenth	3 hours	The student should be ableto diagnose visible symptoms, analyze the plant, and follow appropriate solutions to address the nutrient deficiency.	Boron and Molybdenum: Physiological Functions, Diagnosing Deficiency Symptoms, and Treatment	Presentation Group iscussion Video - presentations Diagnosing - deficiency	Submitting a final report on nutrient deficiency symptoms

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam
40 marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Practical Plant Nutrition. Yusuf Mohammed Abu Dahi. 1989. Ministry of Higher Education and Scientific Research. University of Basra. House of Wisdom.
Main References (Sources)	Plant Nutrition Guide, 1989. Yousef Mohammed Abu Dahi and Mu'ayyad Ahmed Al-Younis. Ministry of Higher Education and Scientific Research.
Recommended Books and References (Scientific Journals, Reports...)	Mengel, K. and E. A. Kirkby, 1984
Electronic References, Websites	Scientific articles published on the ResearchGate platform

Theoretical Course Description

1. Course Name:
Baath regime crimes
2. Course Code:
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr.widad salim mohammad Email:widad.mohammad@uobasrah.edu.iq.
8. Course Objectives

Course Objectives	1- Talking about part of Iraq's contemporary history, the circumstances it went through, and the nature of the Baath regime that prevailed in that period in Iraq. 2- Highlighting the crimes of genocide and human rights violations committed against the Iraqi people.

9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning. • The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, and distributed over 15 weeks.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation
First	2 hours	The student's understanding of the importance of studying the topic.	Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law in 2005	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Second	2 hours	The student's understanding of the most important laws related to crimes.	The crimes of the Baath regime according to the documentation of the Law of the Supreme Iraqi Criminal Court in 2005	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Third	2 hours	The student's understanding of the decisions issued regarding crimes committed by the regime.	Decisions issued by the Supreme Criminal Court	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture under
Fourth	2 hours	The student's understanding of psychological and social crimes and their impact on society at the time.	Psychological and social crimes and their effects and the most prominent violations of the Baathist regime in Iraq	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture

Fifth	2 hours	The student's understanding of the importance of religion, its impact on society, and how the regime dealt with clerics at the time	The Baathist regime's position on religion	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Sixth	2 hours	The student's understanding of the extent of the crimes committed in Iraq at the time.	Violations of Iraqi laws	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Seventh	2 hours		exam	First-month exam	
Eighth	2 hours	The student's understanding of the decisions violated at the time and their impact on society.	Some decisions regarding political and military violations of the Baath regime	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Ninth	2 hours	The student's understanding of the locations of prisons and torture facilities that were used against society at the time	Prison and detention places of the Baath regime	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Tenth	2 hours	. The student's understanding of the extent of the previous regime's violations of laws and their impact on the environment, the	Environmental crimes of the Baath regime in Iraq	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Eleventh	2 hours	The student's understanding of the extent of pollution caused by the previous regime's policies	Military and radiation pollution, mines, and the destruction of cities and villages	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Twelfth	2 hours	The student's understanding of the issue of draining marshes and eroding orchards and their impact on society.	Drying the marshes and bulldozing palm orchards, trees and crops	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Thirteenth	2 hours	The student's understanding of the horrific nature of the mass graves that occurred at the time.	Mass grave crimes	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Fourteenth	2 hours	The student's understanding of the places and times of the crimes.	Chronological classification of genocide graves in Iraq for the period 1963-2003	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Fifteenth	2 hours		exam	Second month exam	
11. Course Evaluation					

Distribution of 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 Sources	
Required Textbooks (Curricular Books, If Any)	The crimes of the Baath regime in Iraq
Main References (Sources)	1. The disintegration of the family and society in and from the Baath. 2. Hussein Aliwi Al-Zayadi, Dr. Abbas Atiya Al-Quraishi, Environmental Crimes of the Baath Regime in Iraq, Iraqi Center for Documentation of Extremist Crimes, Holy Karbala, 2023.
Recommended Books and References (Scientific Journals, Reports...)	Scientific journals
Electronic References, Websites	Some research and articles on genetics

Theoretical Course Description

1. Course Title
Insect Taxonomy / Theoretical
2. Course Code
INTX212
3. Semester / Academic Year
Second Semester / 2024–2025
4. Date of Syllabus Preparation
2025/05/20
5. Available Attendance Modes
In-class attendance

	• Teach students the engineering aspects of aquaculture systems. • Teach students the basic aspects of aquaculture farm design. • Teach students the basic aspects of aquaculture hatchery design. • Teach students the basic concepts of establishing and managing earthen ponds, cages, recirculating aquaculture system, aquaponics and biofloc systems. • Teach students the engineering aspects of automated feeding systems. • Teach students on the nature and types of basic materials and equipment used in aquaculture systems.
6. Total Contact Hours / Credit Hours	
2 hours per week / 2 credits	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.
7. Course Coordinator(s)	

Name: Prof. Muslim Ashour	**Hours**	**Required learning**	**Unit or Subject**	**Learning Method**	**Evaluation Method**
Email: muslim.abdel_wahed@uobasrah.edu.iq	2 hours	Students will be able to identify the basic aspects of	General Introduction	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
	2 hours	Students will be able to differentiate between	Classification of Production Units	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used
8. Course Objectives	2 hours	Students will be able to design and construct earthen	Design and Construction of Earthen Ponds 1	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Understand the fundamental principles of insect taxonomy and the scientific foundations on which classification is based.	2 hours	Students will be able to design and construct	Design and Construction of Earthen Ponds 2	• Theoretical lecture • Presentation • Group	Earth pond design project
	2 hours	Students will be able to identify the materials	Design and Construction of Cages 1	• Theoretical lecture • Presentation • Group	Discussion and oral questions

Differentiate the taxonomic characteristics used to identify insect orders, families, and genera.	2 hours	Students will be able to identify the materials	Design and Construction of Cages 2	• Theoretical lecture • Presentation • Group	Cage design project
	2 hours	None	First Monthly Exam	None	None
Acquire the ability to identify insects to the order level and potentially to the family level using identification keys.	2 hours	Students will be able to identify the materials	Design and Construction of Recirculating	• Theoretical lecture • Presentation • Group	Discussion and oral questions
	2 hours	Students will be able to identify the basics of	Design and Construction of Aquaponics System	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Study insect diversity and the importance of each insect order in terms of morphology, function, and economic value.	2 hours	Students will be able to identify the basics of	Operation of Biofloc System	• Theoretical lecture • Presentation • Group	Comparative report between closed
	2 hours	Students will be able to identify the engineering	Automatic Feeding Systems	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Recognize the significance of insect taxonomy in various fields.	2 hours	Students will be able to identify methods and	Live Fish Transport	• Theoretical lecture • Presentation • Group	Discussion and oral questions
	2 hours	Students will be able to learn the basics of	Instruments and Monitoring	• Theoretical lecture • Presentation • Group	Discussion and oral questions
9. Teaching and Learning Strategies	2 hours	None	Second Monthly Exam	None	None
Interactive Lectures: Present key concepts and insect classifications using visual aids and illustrative examples.	2 hours	None	General Review	• Group discussion • Answering students'	None
Brainstorming and Classroom Discussions: Stimulate analytical thinking and comparison of classification traits among orders.					

Multimedia Use: Including microscopic images and videos to explain anatomical and taxonomic details.	None
	Ivar L.O. 2013. Aquaculture Engineering. John Wiley &
Problem-Based Learning: Analyze case studies and apply taxonomic keys.	Misra R. and Dora K.C. 2015. A text Book on Aquaculture
	https://www.fao.org/fishery/ar

Course Description Form

1. Course Name:
practical principles of field crops
2. Course Code:
FICR115
3. Semester / Year:2024- 2025
First semester- The second stage
4. Description Preparation Date:2024
11-6-2025
5. Available Attendance Forms:
Attending college within practical Classification laboratory- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 3 / 3.5
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Zainab Ahmed Abdul- Razaq Email: zainab.ahmed@uobasrah.edu.iq

8. Course Objectives	
Course Objectives	• Defining the science of field crops, its economic importance, field crops, divisions of agricultural fields, and describing these plants according to families. • The important commercial operations in production and how to carry out germination experiments and calculate seed ratios are also introduced.

9. Teaching and Learning Strategies	
Strategy	The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and	The concept of field crops science - divisions of field crops - scientific nomenclature	Lecture with explanation and presentation.	Discussions and questions
2	3	Knowledge and understanding, brainstorming and mental skills,	Soil service operations - 1 - plowing - benefits of plowing - machines	Lecture with explanation and presentation	Discussions and quiz
3	3	Knowledge and understanding, brainstorming and	Soil Service Operations 2- Smoothing 3-	Lecture with explanation and presentation	Discussions and questions
4	3	Knowledge and understanding, brainstorming and	operations - methods of cultivation - A - method of cultivation	Lecture with explanation and presentation	Quiz and reports

5	3		Exam 1		
6	3	Knowledge and understanding, brainstorming and mental skills, professional and	Crop service operations - hoeing 3- grafting - grafting - planting depth - planting distances	Lecture with explanation and presentation	Discussions and questions
7	3	Knowledge and understanding, brainstorming and mental skills	Conducting a laboratory experiment - Requirements and how to conduct	Lecture with explanation and presentation	Quiz
8	3	Knowledge and understanding, brainstorming and mental skills, professional and	Botanical description of cereal and leguminous crops - display models	Lecture with explanation and presentation	Quiz
9	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills and	Botanical description of oil crops and sugar crops - display models	Lecture with explanation and presentation	. Discussions and questions
10	3	Knowledge and understanding, brainstorming and mental skills, professional and	A field visit to nearby crop fields to learn about plants		field.

11	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and	(Irrigation and drainage) - Irrigation methods - General benefits for the construction of drains	Lecture with explanation and presentation	Discussions and questions
12	3	Knowledge and understanding, brainstorming and mental skills, professional and	Fertilizers and fertilization - types of fertilizers - ways to add fertilizers	Lecture with explanation and presentation	Discussions and questions
13	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and	Harvest - Early and Late Harvest Damage	Lecture with explanation and presentation	Discussions and questions
14			Exam2		
15			Field visit to the fields of the College of Agriculture	Field	

11. Course Evaluation	
Daily exams with multiple-choice questions that require scientific skills. - Daily exams with scientific questions.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	

Main References (Sources)	. Muhammad Amin Omid Nouri (1986). Principles of Field Crops. Ministry of Higher Education and Scientific Research. University of Basra. College of Agriculture. Al-Ansari, Majeed Mohsen et al. (1980). Principles of Field Crops. Ministry of Higher Education and Scientific Research
Recommended Books and References (Scientific Journals, Reports...)	Al-Ansari, Majeed Mohsen (1982). Field Crop Production. Ministry of Higher Education and Scientific Research. College of Agriculture, University of Baghdad.
Electronic References, Websites	

Course Description Form

1. Course Name:
Principles of Theoretical Crops) - Second Stage
2. Course Code:
FICR115
3. Semester / Year:2023- 2024
First semester-the Second stage
4. Description Preparation Date:
2025/6/11
5. Available Attendance Forms: I attend full time
Attending college within practical Classification laboratory
6. Number of Credit Hours (Total) / Number of Units (Total):
3 / 3.5 – 5

7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Mohamed abdulreza Abdulwahed	Email: mohameed.abdl_wahed @uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Defining the science of field crops, its economic importance, field crops, divisions of agricultural fields, and describing these plants according to families. • The important commercial operations in production and how to carry out germination experiments and calculate seed ratios are also introduced
9. Teaching and Learning Strategies	
Strategy	The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	The concept of field crops science - divisions of field crops - scientific nomenclature	Lecture with explanation and presentation.	Display Screen + field.
2	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and	The effect of environmental conditions and temperatures on plant growth and yield	Lecture with explanation and presentation	Display Screen + field.
3	2	Knowledge and understanding, brainstorming and mental skills,	The effect of light on plants and photoperiod	Lecture with explanation and presentation	Display Screen + field.
4	2	Knowledge and understanding, brainstorming and mental skills,	The effect of drought on plant growth and the damage caused by excess water.	Lecture with explanation and presentation	Display Screen + field.
5	2	Knowledge and understanding, brainstorming and mental skills,	Soil, texture, types of water in the soil, how to infer the presence of salinity in the soil	Lecture with explanation and presentation	Display Screen + field.

6	2	Knowledge and understanding, brainstorming and mental skills,	Germination of field crop seeds - factors affecting germination -	Lecture with explanation and presentation	Display Screen + Seed sample
7	2	Knowledge and understanding, brainstorming and mental skills,	Seed dormancy, what causes it, and how to get rid of it	Lecture with explanation and presentation	Display Screen + laboratory
8	2	Knowledge and understanding, brainstorming and mental skills,	Definition of jungles, methods of combating them, and the losses they cause	Lecture with explanation and presentation	Display Screen + field.
9	2	Knowledge and understanding, brainstorming and mental skills,	The agricultural cycle, its importance and benefits for plants, and how to design it	Lecture with explanation and presentation	Display Screen + field.
10	2	Knowledge and understanding, brainstorming and mental skills,	A field visit to nearby crop fields to learn about plants	Lecture with explanation and presentation	field.
11	2	Knowledge and understanding, brainstorming and mental skills,	Fertilizers and fertilization - Types of fertilizers -	Lecture with explanation and presentation	Display Screen + field.
12	2	Knowledge and understanding, brainstorming and mental skills,	Methods of adding fertilizers	Lecture with explanation and presentation	Display Screen + Fertilizer sample
13	2	Knowledge and understanding, brainstorming and mental skills,	Life factors and studying the relationship between field crops and other organisms	Lecture with explanation and presentation	Display Screen + field.

11. Course Evaluation

, Daily exams with multiple-choice questions that require scientific skills.
- Daily exams with scientific questions.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	لايوجد
Main References (Sources)	محمد امين اوميد نوري (1986). مبادئ المحاصيل الحقلية. وزارة التعليم العالي والبحث العلمي. جامعة البصرة. كلية الزراعة. الانصاري، مجيد محسن وآخرون (1980). مبادئ المحاصيل الحقلية. وزارة التعليم العالي والبحث العلمي.

Recommended Books and References (Scientific Journals, Reports...)	الانصاري، مجيد محسن (1982). انتاج المحاصيل الحقلية. وزارة التعليم العالي والبحث العلمي. كلية الزراعة، جامعة بغداد.
Electronic References, Websites	لايوجد

Theoretical Course Description

1. Course Name:
Medical and Veterinary Insects
2. Course Code:
MEIN243
3. Semester / Year:
Second Semester / 2024–2025
4. Description Preparation Date:
2025/01/02
5. Available Attendance Forms:
In-class attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours weekly / 2 credit hours
7. Course Administrator's Name (Mention All, If More Than One Name)
8. Course Objectives

Course Objectives	• 1. Enable students to comprehend all aspects of medical and veterinary insects and their role in transmitting diseases to humans and domesticated animals. • 2. Identify key methods for controlling medical insects. • 3. Equip students with the skills to detect and identify habitats of medical insects. • .

9. Teaching and Learning Strategies	
Strategy	• **1. Theoretical in-class lectures.** • **2. Presentations and video-based materials.** • **3. Group discussions.** • **4. Problem-based, inquiry-based, and brainstorming learning methods.** • **5. Report and project-based learning.**

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**. Introduction to Medical Entomology and the Medical Importance of these Insects**	**Definition of medical entomology**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Second	2 hours	**Identifies the key factors influencing the epidemiology of diseases**	**Epidemiology**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Third	2 hours	**Introduction to the Major Cockroach Species**	**Order: Dictyoptera**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Fourth	2 hours	**Identifying Medically Significant Insect Vectors within this Order**	**Order Hemiptera**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**

Fifth	2 hours	**Identification of Disease-Vector Species in this Order Affecting Humans and Animals**	**Order Diptera**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Sixth	2 hours	**Identification of Housefly Characteristics and Major Diseases They Transmit**	**suborder : cyclorrapha**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Seventh	2 hours	**Identifying the types of mosquitoes, distinguishing between them, and the most important diseases transmitted by each**	**Suborder: Nematocera**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Eighth	2 hours		**First exam**		
Ninth	2 hours	**Learn about the most important types of this suborder and the most important diseases they transmit to humans and animals.**	**Suborder: Brachycera**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Tenth	2 hours	**Learn about the types of myiasis, the most important insects that cause them, and the most important methods of prevention**	**myiasis**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Eleventh	2 hours	**Students will be able to differentiate between it and myiasis and learn about the most important insects that cause pests and the**	**Bot**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Twelfth	2 hours	**The student is able to distinguish between types of lice.**	**Order: Mallophaga**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Thirteenth	2 hours	**Distinguish between the types of mites that transmit pathogens**	**The medical significance of the mites / mites about mange in humans, mites about mange in goats, mites about mange in sheep**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Fourteenth	2 hours	**Identifying tick types and their medical and veterinary importance**	**tick**	**Presentation Group Discussions**	**Oral Discussion and Questions Daily Quiz**
Fifteenth	2 hours		**Second exam**	•	

11. Course Evaluation

The grade is distributed out of 100 based on the student's assigned tasks, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for attendance, participation, and answering oral questions 5 points for reports and projects 10 points for the first monthly exam 10 points for the second monthly exam 30 points for the final exam Total: 60 points 40 points for the practical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Medical and Veterinary Entomology - Written by Dr. Salem Jameel
Main References (Sources)	Lectures prepared by the instructor Book (Medical and Veterinary Pests - Abdel-
Recommended Books and References (Scientific Journals, Reports...)	Veterinary Parasitology, authored by Dr. Ghazi Yaqoub Ghazal Al-Amara, University
Electronic References, Websites	https://books-library.website/t-Insects-download-4

Practical Course Description

1. Course Name:
Medical and Veterinary Insects
2. Course Code:
MEIN243
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Amjed Abbas Fadhel	Email: amjed.fadhil@uobasrah.edu.iq

8. Course Objectives

Course Objectives	Enabling the student to learn the most important laboratory methods for identifying and distinguishing between the most important types of medical and veterinary insects, diagnosing them, and the most important symptoms of infection with them.

9. Teaching and Learning Strategies

Strategy	**Interactive lectures** **Brainstorming** **Assignment and reports** **Presentation of medical and veterinary entomology models** **Dialogue and discussions**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	The student participates in collecting insect specimens.	Classify insects (the most important orders of medical importance)	Presentation Group Discussions	Daily testing Report assignment
2	3	Identify and distinguish between types of cockroaches	Order: Dictyoptera	Presentation Group Discussions	Daily testing Report assignment
3	3	Identify the insects of this order of medical importance (bed bugs)	Order: Hemiptera	Presentation Group Discussions	Daily testing Report assignment

4	**3**	**Identifying Diptera**	Order: Diptera	**Presentation Group Discussions**	**Daily testing Report assignment**
5	**3**	**Identifying houseflies**	**suborder: Cyclorrohapha**	**Presentation Group Discussions**	**Daily testing Report assignment**
6	**3**	**Identifying mosquito species**	• **suborder: Nematocera**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
7	**3**	**Identifying the types of flies**	• **suborder: Brachycera** •	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
8	**3**	**Collection of specimens of Diptera insects from the animal field**	**Identify the types of insects collected**	**Create temporary insect slides Group discussions**	**Daily testing Report assignment**
9	**3**		**First exam**		
10	**3**	**Identify the most important insects that cause myiasis.**	**Family: Lucilidae calliphoridae Family:**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
11	**3**	**Identify the most important insects that cause s Bot.**	**Family: Gastrophilidae Family: Hypodermatidae Family: Oesteridae**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
12	**3**	**Differentiating between different types of lice**	**Pediculushumanuscapitis Pediculushumanus pubis Pediculushumanus coporis**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
13	**3**	**Differentiating between types of mites**	**The medical significance of the mites / mites about mange in humans, mites about mange in goats, mites about mange in sheep**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**

14	**3**	**Differentiating between soft ticks and hard ticks**	**Argasidae Ixodidae**	**Presentation Group Discussion Insect Model Presentation**	**Daily testing Report assignment**
15	**3**		**Second exam**		

11. Course Evaluation

The grade is distributed out of 40 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc.
1 -5 points for attendance, participation, and answering oral questions
2 -5 points for reports and projects
3 -5 points for the first exam
4 -5 points for the second exam
5- 20 points for the final exam

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Medical and Veterinary Entomology - Written by Dr. Salem Jameel
Main References (Sources)	Lectures prepared by the instructor Book (Medical and Veterinary Pests - Abdel-
Recommended Books and References (Scientific Journals, Reports...)	Veterinary Parasitology, authored by Dr. Ghazi Yaqoub Ghazal Al-Amara, University
Electronic References, Websites	https://books-library.website/t-Insects-download-4

Practical Course Description

1. Course Name:
ANALYTICAL CHEMISTRY
2. Course Code:
ANCH221
3. Semester / Year:
First Semester / 2024-2025

4. Description Preparation Date:	
18/04/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 3.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Enas A. Ali Email: enas.ali@uobasrah.edu.iq Name: Ragad Saad Musa Email: raghad.saad@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Analytical chemistry students' understanding of the scientific foundations. • Students are knowledgeable about the equipment and tools used in the trade. • Students' understanding of hazardous chemicals and their proper handling. • Additionally, students should have knowledge of how to safely handle tools. • Watch videos and images to view complete versions of equipment that cannot be used in the laboratory or is not accessible.
9. Teaching and Learning Strategies	
Strategy	• . In classroom laboratories, practical lectures are given. • **Students develop through brainstorming through the use of questions and answers during lectures.** • **To gain experience and prepare students for work after graduation, group discussions and self-administered experiments are utilized.** • **Weekly reports are prepared.** • **• Quick exams are conducted during lectures to reinforce key fundamentals.**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	**Student knowledge of the most important basics and required skills**	**A general introduction to analytical chemistry, its divisions, and knowledge of the most important laboratory tools.**	• **Practical lecture** • **Group discussion** • **Conducting experiments** • **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** • **Questions and answers during the lecture**
Second	3 hours	**To familiarize the student with the difference between strong and weak acids, bases, and standard solutions, and how to calculate the molarity of a solution through calibration.**	**How to determine the concentration of hydrochloric acid using a standard solution of sodium carbonate**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Third	3 hours	**Students will be able to calculate and understand the most important equations, how to calculate the weights of the materials used in the experiment, and how to determine the standard solution from a non-standard substance.**	**Preparation and titration of a 0.1% solution of sodium hydroxide**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Fourth	3 hours	**The student's knowledge of the importance of using the appropriate guide according to the material used, the reasons for using the guide, and the colors obtained from adding it.**	**Determine the mixture of carbonates and bicarbonates**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Fifth	3 hours	**Students will learn about weak acids and how to calculate the acidity**	**Determine the acidity of vinegar.**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Sixth	3 hours	**None**	**First month exam**	**None**	**None**
Seventh	3 hours	**Student knowledge of grading and the difference between the Mohr and Volhar methods**	**Sedimentary correction**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**

Eighth	3 hours	**Complete the lecture and know the reason for conducting the experiment in the presence of an acidic medium.**	**Retrospective correction (chloride determination by the Volhard method)**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Ninth	3 hours	**To familiarize the student with the EDTA compound by drawing the chemical structure, how to preserve it, and its most important reactions.**	**Methods of correction by forming chelating complexes**	• **Practical lecture** • **Group discussion** • **Conducting experiments** **Viewing the most important tools and equipment**	• **Lecture delivery** • **Conducting experiments** • **Discussing the reasons for the lecture** **Questions and answers during the lecture**
Tenth	3 hours	**Differentiate between the reaction of potassium permanganate solution in acidic and basic medium.**	**Oxidative-reductive correction methods**	**Practical lecture** **• Group discussion**	**Oral discussion and questions**
Eleventh	**3 hours**	**None**	**second month exam**	**None**	**None**
Twelfth	3 hours	**Ensure that the student knows the most important hazardous materials and how to deal with them.**	**Review of the material**	**• Watch videos of all lectures to consolidate the experiences**	**Oral discussion and questions**
Thirteenth	3 hours	**None**	**Comprehensive exam**	**None**	**None**

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc.
5 points for reports and forms
5 points for weekly attendance
10 points for the first monthly exam
10 points for the second monthly exam
20 points for the final exam
40 points total
60 points for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Quantitative Analytical Chemistry: by Dr. Majeed Al-Qais [2] Theoretical Basics of Inorganic Analytical Chemistry: Quantitative Gravimetric and Volumetric Analysis: by Dr. Hadi Kazim Awad [3] Analytical Chemistry for Students of the College of Agriculture and Forestry: by Dr. Nabil Fadel Khalil
Main References (Sources)	Analytical Chemistry by Gary D. Christian

Theoretical Course Description

1. Course Name	
Computer 2 / Theoretical	
Course Code .2	
UOB204	
3. Semester/Year	
Second Semester / 2024-2025	
Date of preparation of this description .4	
02/01/2025	
5. Available attendance forms	
Classroom presence	
6. Number of credit hours (total) / number of units (total)	
Two hours/ unitsECTS	
7. Course administrator's name (if more than one name is mentioned)	
Name: Assoc. Prof. Mojtaba Abdel Wahab Taher Email: mujtaba.tahir@uobasrah.edu.iq	
8. Course Objectives	
• Enhance students' skills in the advanced use of Microsoft Office programs (Word, Excel, PowerPoint). • Train students to integrate Microsoft Office applications to prepare integrated and advanced projects. • Enable students to efficiently handle long documents and organize sections and chapters using the advanced tools in Word. • Develop students' abilities to prepare professional presentations using multimedia such as audio, video, and animation in PowerPoint. • Prepare students to accomplish integrated practical projects that effectively combine word processing, data analysis, and	Course Objectives
9. Teaching and learning strategies	

• Theoretical and applied lectures using presentations and interactive techniques. • Hands-on training within laboratories to promote the direct application of skills. • Applied projects and individual and group practical assignments. • Group discussions and workshops to stimulate interaction and exchange of experiences among students.	Strategy

10. Course Structure

Evaluation method	Learning method	Unit or subject name	Required Learning	Hours	Week
Discussion and oral questions	Theoretical lecture and practical application	Introduction to Microsoft Word	Learn about the Word interface and create documents	2hr	First
Practical duty	Practical application	Advanced tools in Word	Use advanced tools in Word	2hr	Second
Short practical test	Theoretical lecture and practical application	Introduction to Microsoft Excel	Learn about the Excel interface and create tables	2hr	Third
Small Project	Practical application	Excel formulas and functions	Use formulas and arithmetic functions	2hr	Fourth
Oral presentation	Theoretical lecture and practical application	Introduction to Microsoft PowerPoint	Learn about the PowerPoint interface and create slides	2hr	V
Practical duty	Practical application	PowerPoint effects and transitions	Add advanced effects and transitions	2hr	Sixth
Integrated Project	Applied Project	Integrated Applications 1	Merge Word and Excel into a project	2hr	Seventh
Integrated Project	Applied Project	Integrated Applications 2	Merge Excel and PowerPoint into a project	2hr	Eighth
Short practical test	Theoretical lecture and practical application	Long Document Management	Handling long documents and managing chapters	2hr	Ninth
Practical duty	Practical application	Advanced document formatting	Advanced formatting for long documents	2hr	X
Research Report	Theoretical lecture and practical application	Pivot tables	Using pivot tables in data analysis	2hr	Eleventh
Small Project	Practical application	Graphs and statistics	Create advanced charts	2hr	Twelfth

Oral presentation	**Theoretical lecture and practical application**	**Custom templates**	**Use custom templates in PowerPoint**	**2hr**	**Thirteenth**
Advanced Presentation Project	**Practical application**	**Multimedia in PowerPoint**	**Add multimedia in presentations**	**2hr**	**Fourteenth**
Final Project	**Practical training and discussion**	**Review and final project**	**General review and completion of the final project**	**2hr**	**Fifteenth**

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports ... Etc.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 degrees
40 degrees for the practical part

12. Learning and Teaching Resources

No textbook	Required textbooks (methodology, if any)
Researchers, Al-Khidr Ali Al-Khidr (2020) Computer and Software Fundamentals . Al-Hajj , Ahmed Mohamed Ibrahim Mohamed, (2013) Learning Computer Basics, Noor Library	Key references (sources)
	Recommended supporting books and references (scientific journals, reports...)
https://alison.com/tag/computer-skills	Electronic references, websites

3rd level

Course Description Form

1. Course Name:
Biochemistry
2. Course Code:
BICH330
3. Semester / Year:
First semester / 2024 - 2025
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Full time (theoretical lecture/practical lecture)
6. Number of Credit Hours (Total)/Number of Units (Total)
5 hours per week for 14 weeks
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Assist. Prof. asraa yacoob yousif Email:asraayousif@uobasrah.edu.iq
8. Course Objectives

Course Objectives	Realizing the importance of studying biochemistry and its branches and introducing the student to the importance of biochemistry in agricultural fields, especially in animal production sciences. Knowing the structure and importance of chemical functional groups. The student also knows and classifies the different groups of carbohydrates and their biological value. He knows and classifies lipid compounds and their structural formulas and biological value - knowledge of amino acids. Classifying them, their physical and chemical properties, describing their chemical formulas and their role in protein structure - knowing proteins, their structure, types, different functions and factors affecting them - describing enzymes and knowing their role in biological reactions as catalysts, as well as knowing how biochemical reactions occur.
9. Teaching and Learning Strategies	
Strategy	- Fighting poverty - 2 - No hunger - 3 - Developing lifelong learning and education - 4 - Green chemistry - 5 - Sustainable development - 6 - Water purification - 7 - Water recycling for agriculture - 8 - Creativity and production - 9 - Sustainable energy (wind and sun) and organic energy) -10- Environmental development- 11- Pollution measurement -12- Child care -13- Public health development-14- Measuring the efficiency of health institutions-15- Gender equality-16- Non-extremism-17- Medication efficiency-18- Food efficiency for infants, children, adults and the elderly - 19 - Overall environmental efficiency - 20 - Waste recycling - 21 - Heavy water

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	5	Biochemistry and living cell	Biochemistry and living cell	Teaching method	the exams Daily and monthly And final
2	5	Water and solutions in biochemistry	Water and solutions in biochemistry	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
3	5	Carbohydrates	Carbohydrates	Lectures Theoretical and practical + Display	the exams Daily and monthly And final

4	5	Carbohydrates and photosynthetic activity	Carbohydrates and photosynthetic activity	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
5	5	Monosaccharides	Monosaccharides	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
6	5	First month exam	First month exam	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
7	5	Lipids	Lipids	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
8	5	Properties of fats	Properties of fats	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
9	5	Proteins	Proteins	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
10	5	amino acids	amino acids	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
11	5	Enzymes	Enzymes	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
12	5	Peptides	Peptides	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
13	5	Isozymes	Isozymes	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
14	5	Naming and classifying enzymes	Naming and classifying enzymes	Lectures Theoretical and practical + Display	the exams Daily and monthly And final
11. Course Evaluation					

- Daily exams with multiple-choice questions that require scientific skills.
- Daily exams with scientific questions.
- Participation grades for competition questions for academic subjects.
- Marking homework and reports
- - Grades for the student's activity during the lecture and the extent of his commitment to regular attendance and absence.

12. Learning and Teaching Sources	
Foundations of Biochemistry - Abdel Moneim Al-Aasar - Academic Library (1996) - Cairo.	Biochemistry, 5th edition, Campbell, M.K., Farrell, S.O. (2006
Al-Nour Library for Books	https://www.noor-book.com-pdf
Biochemistry	https://www.marefa.org

Theoretical Course Description

1. Course Name:
Experimental design and statistical analysis
2. Course Code:
DAEX327
3. Semester / Year:
Second semester / 2024 - 2025
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Teacher. Muntaha Yacoob Yousief Email: .: muntaha.yousief@uobasrah.edu.iq
8. Course Objectives

Course Objectives	Graduating capable studentson me: • Working in the field of designing agricultural experiments, they have theoretical and applied knowledge regarding the design subject. • Obtaining the skills required for the post-graduation plan (graduate studies). • Collecting, tabulating and summarizing data. • Conduct statistical tests. • Discussing and interpreting results and making decisions. • Using modern methods and statistical programs that contribute to the design of agricultural experiments and that are reflected in its various production characteristics. Providing students with work skills in scientific and research fields and studying the science of designing and analyzing experiments and its relationship to designing successful experiments that contribute to the success of livestock projects.

9. Teaching and Learning Strategies	
Strategy	1-Enabling students to think and analyze topics related to the intellectual framework of the design and analysis of experiments subject. 2- Enabling students to think and analyze topics related to ways to design successful experiments related to increasing productivity. 3- The design and analysis of experiments is a branch of statistics that is interested in applying the statistical method, and is an important topic in the research planning of managing and conducting a particular experiment to obtain data that can be analyzed and reach a specific conclusion through which it includes collecting, arranging and reducing data and then conducting certain statistical tests used to make decisions regarding the objectives that the experiment is designed to study.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Introducing students to general information about the science of designing and	Introduction, Central Tendency Measurements, Mean	• Theoretical lecture • Presentation • discussion	Discussion and oral questions

Second	2 hours	Introducing students to some general characteristics of the arithmetic mean, median, and mode	Mean properties, Median, Mode	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 hours	Introducing students to some important standards used in design.	Dispersion Measurements Range, Variance,	• Theoretical lecture • Presentation • discussion	Discussion and oral
Fourth	2 hours	Introducing students to how to calculate relative dispersion measures, the coefficient of variation, and the standard score	Coefficient of Variation, Standardized Scores	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Fifth	2 hours	Introducing students to the basic components of variance analysis and the	Analysis of Variance, Linear Model	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Sixth	2 hours	Introducing students to the most important components of the analysis of variance	Analysis of Variance table,	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Seventh	2 hours	Explain and explain the completely randomized design	Complete Randomized Design (CRD)	• Theoretical lecture • Presentation discussion	Discussion and oral
Eighth	2 hours	None	First Monthly Exam	• None	None
Ninth	2 hours	Introducing the importance of calculating the average test.	Least Significant Difference (LSD)	• Theoretical lecture • Presentation • discussion	Discussion and oral questions

Tenth	2 hours	Explain and clarify the variance and standard deviation of the difference between the averages of two	Variance of the difference between two treatments mean	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Eleventh	2 hours	Introduction to Duncan tests and how to calculate them.	Duncan's Multiple Range, Lest Significant Range (LSR)	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Twelfth	2 hours	A detailed explanation of the completely randomized block design	Randomized Complete Block Design (RCBD)	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Thirteenth	2 hours	Introducing students to methods for estimating missing values	Missing Value, Relative Efficiency between RCBD & CRD	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Fourteenth	2 hours	2 hours	None	Second Monthly Exam	None
Fifteenth	2 hours	2 hours	None	General Review	• Group discussion Answering students'

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Khashi Mahmoud Al-Rawi and Abdul Aziz Muhammad Khalaf Allah (1980). Design and analysis of agricultural experiments - Ministry of Higher Education and Scientific Research - University of Mosul - Republic of Iraq.
Main References (Sources)	1- Ahmed Obada Sarhan (1983). Design and analysis of experiments - University Books House - Cairo - Arab Republic of Egypt. 2- Naeem Thani Al-Muhammad, Khashi Mahmoud Al-Rawi, Moayad Ahmed Younis and Walid Khudair Al-Marani (1989). Principles of Statistics - Dar Al-Kutub Foundation for Printing and Publishing - University of Mosul - Iraq. 3- Mohamed Abdel Moneim's wealth (2004). Design and analysis of experiments - Anglo-Egyptian Library - Arab Republic of Egypt.
Recommended Books and References (Scientific Journals, Reports...)	Various classification research and university thesesdomestic in Experimental design and statistical analysis
Electronic References, Websites	https://agr.mu.edu.iq/wp-content/uploads/2021/10/%D8%AA%D8%B5%D9%85%D9%8A%D9%85-%D9%83%D8%A7%D9%85%D9%84-%D8%AF-%D8%B1%D8%A7%D8%BA%D8%A8.pdf

Course Description Form

1. Course Name:
design and analysis of agriculture experiments (Practical) – Third stage - Department of Plant Protection / College of Agriculture - University of Basrah
2. Course Code:
DAEX327
3. Semester / Year:2024- 2025
First semester- third stage
4. Description Preparation Date:2023

14- 4-2025					
5. Available Attendance Forms:					
In presence- full time					
6. Number of Credit Hours (Total) / Number of Units (Total):					
5 / 3.5					
7. Course Administrator's Name					
Name: Khawla Dawood Gatie **Email: khawla.dawood@uobasrah.edu.iq**					
8. Course Objectives					
Course Objectives.		**introduction to general concepts of desertification.** **The difference between desertification and deserts.** **Climate changes and their relationship to desertification.** **Global warming and the greenhouse effect phenomenon.** **Crops adapted to desertification.**			
9. Teaching and Learning Strategies					
Strategy	**The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, and distributed over 15 weeks.**				
10. Course Structure					
Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**

1	**3**	**Introduction to Statistics (examples)**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**discussion**
2	**3**	**Examples of Measures of dispersion and centering**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work**
3	**3**	**Statistical procedures for agricultural research. Examples and Introduction to agricultural experiment design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**discussion**
4	**3**	**Completely Randomized Design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work and discussion**

5	3	Tests suggested after experimentation (exercises)	To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	a lecture with an explanation, a presentation,	Class room work and discussion
6		First-month exam			
7	3	Randomized complete block design (exercises)	To be able to understand and comprehend the theoretical material and apply it in the	a lecture with an explanation, a presentation,	discussion and quiz
8	3	Examples of the relative efficiency of a complete randomized block design compared to a completely randomized design	To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	a lecture with an explanation, a presentation,	Discussion and example
9	3	Examples of Latin square design	To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	a lecture with an explanation, a presentation,	Class room work and discussion

10	**3**	**Examples of missing value estimation in Latin square design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly**	**a lecture with an explanation,**	**discussion**
11	**3**	**Examples of the Latin Square Design for Mean Testing**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly**	**a lecture with an explanation,**	**Class room work**
12	**3**	**The relative efficiency of the Latin square design compared to the completely random design and the block design (Examples)**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work and discussion**
13	**3**	**Examples of all designs**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**discussion and quiz**

14	**3**	**Factorial Experiments**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**quiz**
15	**3**	**Second month exam**			

11. Course Evaluation
The final exam is of 50 theoretical and practical of 20, 10 for each monthly exam, 5 POM exam, and 5 reports.

12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	**design and analysis of agricultural experiments**
Main references (sources)	**Principles of Statistics.** **design and analysis of agricultural experiments**
Recommended supporting books and references (scientific journals, reports...)	**Statistical procedures for agricultural research.**
Electronic references, websites	**Many resources**

Theoretical Course Description

1. Course Name:	
Plants environment / Theoretical	
2. Course Code:	
PLEC312	
3. Semester / Year:	
Frist Semester / 2024-2025	
4. Description Preparation Date:	
15/05/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Layla Abdulraheem Benyan Email: Layla.benyan.@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	Knowledge of climate and weather factors and their effect on plants Knowledge of the latest devices for measuring pressure, temperature and humidity..... ..... • .....
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students will be able to identify and classify environmental factors.**	**General concepts about environmental factors**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	. Students will be able to identify the importance of the environment, the concept of the biosphere, the Earth and its layers.	**Dynamic environmental factors And its interconnectedness**	• Theoretical lecture • Presentation • discussion	Report on the damage of these insects to field crop plants and other plants
Third	2 hours	**Students will be able to identify the climatic factors that influence living things and determine the distribution of vegetation and animals**	**Climatic factors**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	**Students will be able to identify the effect of light on the shape and structural characteristics of plants**	**Light**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Students will be able to identify the source of heat and temperature changes on the Earth's surface and their effect on plants.**	**Heat and thermal regime in the soil**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	1 hours	**None**	**First Monthly Exam**	**none**	**None**
Seventh	2 hours	**Students will be able to identify the role of vegetation in regulating ambient air temperature.**	**the thermal system inside the plants**	**•Theoretical lecture •Presentation •Group discussion Video**	**Discussion and oral questions**
Eighth	2 hours	. Students will be able to identify the thermal effect on the life of living organisms in conditions of extreme low and high temperatures.	**The effect of temperature on the plant life cycle**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Ninth	2 hours	**Students will be able to identify natural water sources and the different forms of water.**	**Water**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	**Students will be able to identify the forms and states of water in nature and the water needs of plants.**	**Fog and clouds**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	**None**	**Second Monthly Exam**	**none**	**None**
Twelfth	2 hours	**Students will be able to recognize the differences in physical and chemical properties of atmospheric gases and their biological**	**The biological and environmental importance of gases**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	1 hours	**Students will be able to recognize the direct and indirect effects of wind and the various changes caused by wind on the levels of other**	wind	**•Theoretical lecture •Presentation •Group discussion Video**	**Discussion and oral questions**
Fourteenth	2 hours	**Students will be able to identify surface features of the Earth, such as relief and elevation above sea level, which play a key role in**	**Topographical factors**	**•Theoretical lecture •Presentation •Group discussion Video**	**Discussion and oral questions**
Fifteenth	2 hours	**Students will be able to identify morphological, anatomical, and chemical patterns, as well as predation among organisms.**	**The relationship between plants and other plants**	**• Theoretical lecture • Presentation •Group**	**Discussion and oral questions**

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Book: Basics of Environmental Science and its Applications, 1995, author: Zahran,
Main References (Sources)	Fundamentals of Environmental Science
Online references, websites	Scientific publications and research

Practical Course Description

1. Course Name:
Plants environment / Practical
2. Course Code:
PLEC312
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
17/05/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:shatha fadel abad sayed Email:shatha. sayed@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• . • Teach students the basic aspects of plant ecology • • Teach students the basic aspects of environmental factors • • Teach students the basic aspects of ecological systems • • Teach students the basic concepts and biotic factors

9. Teaching and Learning Strategies

Strategy	• Practical lectures in the laboratory and field visits.. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Students will be able to identify the basic aspects of aquaculture engineering.	**Introduction to plant ecology**	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Second	3 hours	Students will be able to differentiate between production units in aquaculture based on density, control, location of culture, etc.	**Temperature**	• Practical lecture • Presentation • Group discussion	Quick test Students identify the appropriate type for a group of production units mentioned in the questions

Third	3 hours	Students will be able to design and construct earthen ponds and handle the equipment and supplies for them.	**Atmospheric pressure**	• Practical lecture • Presentation • Group discussion	Solving practical problems
Fourth	3 hours	Students will be able to	**Relative humidity**	• Explanation by the subject teacher • Explanation by the farm management	Discussion between students and between them and the subject teacher or farm management
Fifth	3 hours	Students will be able to The relationship between the environment and wind	. Wind	• Practical lecture • Viewing samples of materials and equipment • Performing calculations using mathematical methods	Solving practical problems
Sixth	3 hours	Students will be able to The relationship between the environment and rain.	. .rain	• Explanation by the subject teacher • Explanation by the farm management in the event of a field visit	Discussion between students and between them and the subject teacher or farm management in the event of a field visit
Seventh	3 hours	None	First monthly exam	None	None
Eighth	3 hours	Students will be able to The relationship between biological factors and the environment	**Vital factors**	• Practical lecture • Presentation • Video	Discussion and oral questions

Ninth	3 hours	Students will be able to The relationship between parasitism and the environment .	. parasitism	• Practical lecture • Presentation • Video	Discussion and oral questions
Tenth	3 hours	Students will be able to The relationship between environment and cohabitation	Coexistence	• Practical lecture • Presentation • Video	A report discussing the system that is most suitable for the local environment and the most feasible for application
Eleventh	3 hours	Students will be able to The relationship between competition	. Competition	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	3 hours	Students will be able to The relationship between plants and animals.	The relationship between plants and animals	• Practical lecture • Presentation • Video	Assigning students to transport a group
Thirteenth	3 hours	Students will be able to		• Practical lecture • Presentation • Video	Discussion and oral questions
Fourteenth	3 hours	None	Second monthly exam	None	None
Fifteenth	3 hours	None		• Group discussion • Answering students' inquiries	None

11. Course Evaluation
Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 20 marks for the final exam 40 marks total 60 marks for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Book: Basics of Environmental Science and its Applications, 1995, author: Zahran,
Main References (Sources)	Fundamentals of Environmental Science
Recommended Books and References (Scientific Journals, Reports...)	Scientific publications and research
Electronic References, Websites	

Theoretical Course Description

1. Course Name:
English3 / Theoretical
2. Course Code:
ENGL306
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
03/09/2024
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units

7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Hazim Sabah Al-Hamadani	Email: hazim.rahmah@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Thinking and analysis skills that enable access to knowledge of English language. • Submission of external examinations by local / regional / international bodies. • Obtaining the skills required for a postgraduate plan (postgraduate studies).
9. Teaching and Learning Strategies	
Strategy	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Students will be able to identify the basic aspects of learning English.	General Introduction	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to distinguish between nouns, verbs and their functions.	Nouns with reference to their type, gender, number and functions	• Theoretical lecture • Presentation • discussion	Daily, monthly and final exams and daily reports
Third	2 hours	Students will be able to distinguish between the main verbs and the importance of each one, as well as knowing the tenses.	Main verbs with reference to tenses	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions

Fourth	2 hours	Students will be able to distinguish between the main verbs and the importance of each one, as well as knowing the tenses.	Auxiliary verbs with reference to tenses	• Theoretical lecture • Presentation • Group discussion Video	Daily, monthly and final exams and daily reports
Fifth	2 hours	Students will be able to distinguish between consonants and vowels.	Study the English vowels.	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Sixth	2 hours	Adjectives	Study the English adjectives	• Theoretical lecture • Presentation • Group discussion Video	Daily, monthly and final exams and daily reports
Seventh	2 hours	None	First Monthly Exam	None	None
Eighth	2 hours	Conjunctions	Important of conjunctions	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	Prepositions	Important of prepositions	• Theoretical lecture • Presentation • Group discussion Video	Daily, monthly and final exams and daily reports
Tenth	2 hours	Passive voice	Study the passive voice	• Theoretical lecture • Presentation • Group discussion Video	Comparative Daily, monthly and final exams and daily reports
Eleventh	2 hours	Negative	Study the negative	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	Questions	Study the questions	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Students will be able to learn the basics of sentence writing.	Other grammatical items that help to start learning English.	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None

Fifteenth	2 hours	None	General Review	• Group discussion • Answering students' questions	None

11. Course Evaluation

-Daily exams with multiple-choice questions that require scientific skills.
-Daily exams with scientific questions.
- Post scores for competition questions for academic subjects.
- Grades for homework and reports
Grades for the student's activity during the lecture and the extent of his commitment to attendance and absence.

12. Learning and Teaching Sources

Various sources from the internet and website	

Theoretical Course Description

1. Course Name:	
Plant Breeding / Theoretical	
2. Course Code:	
PLBR414	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Muhamed Auda Kalaf	Email: mohammad.kalaf@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• To learn about plant breeding and related sciences • To learn about plant breeding methods and the objectives of plant breeding • To study the methods of plant reproduction, male sterility, and its relationship to plant breeding • To study genetic and environmental variations and their relationship to plant growth • To define plant breeding and its importance • To learn about plant breeding methods • To learn about the difficulties facing plant breeders when implementing breeding programs
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Students will be able to identify the basic aspects of plant breeding.	Definition of plant breeding - Historical overview - Objectives of plant	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to identify the methods of reproduction in	Methods of reproduction in plants - Types of pollination in plants	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 hours	Students will be able to identify variations and their relationship to plant growth,	Variations and their relationship to plant growth - Types of variations - Sterility and incompatibility	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Fourth	2 hours	Students will be able to know what male infertility is, its types, and its	Male infertility - its types - its practical benefits	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Fifth	2 hours	Students will be able to understand the concept of homology, its	Genetic homology - its dangers - chromosome duplication - its	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Sixth	2 hours	Students will be able to identify plant breeding methods, the	Plant breeding methods - duties of genetic material introduction	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Seventh	2 hours	None	First Monthly Exam	None	None
Eighth	2 hours	Students will be able to identify the concept of adaptation and its	Adaptation - its types - selection - its types - pure breed - benefits of	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Ninth	2 hours	Students will be able to identify the difference between self- and	Comparison of self-pollinated and cross-pollinated crops - comparison	• Theoretical lecture • Presentation • Group	Discussion and oral questions

Tenth	2 hours	Students will be able to identify the benefits of backcrossing,	Benefits of back-cross pollination - hybrid - hybrid types	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Eleventh	2 hours	The synthetic Variety - its features	Students will be able to identify what a compound class is and what its	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Twelfth	2 hours	Methods of breeding vegetative propagated plants	Students will be able to identify methods of vegetative	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Thirteenth	2 hours	Genetic mutations - their types - methods of occurrence	Students will be able to identify the concept of genetic mutations, their	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None
Fifteenth	2 hours	None	General Review	• Group discussion • Answering students'	None

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	1- Genetics and Plant Breeding (Dr. Hamid Jalub Ali) 2- Field Crop Breeding (Dr. Adnan Al-Adhari) 3- Plant Breeding and Improvement (Dr. Madhat Al-Sahouki and others) 4- Principle of Plant Breeding Author (Alard)

Course Description Form

1. Course Name :Plant Breeding Practical-	
Third stage - Department of Plant Protection / College of Agriculture - University of Basrah	
2. Course Code:	
3. Semester / Year:	
2024-2025	
4. Description Preparation Date:	
31-1-2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 Hours	
7. Course Administrator's Name	
Name: Dr. Muhamed Auda Kalaf	Email: mohammad.kalaf@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	1 -Introducing the science of plant breeding and its importance 2 -Methods of plant breeding 3 -Difficulties facing plant breeders when implementing breeding programs 4- Modern breeding methods used to improve plant characteristics
9. Teaching and Learning Strategies	

Strategy	Theoretical lectures in classrooms -Presentations and video materials -Group discussions - Report-based learning

10. Course Structure

Week	Hours	Unit or Subject Name	Required learning outcomes	Learning Method	Evaluation Method
1	3	Defining the science of plant breeding and improving it. Objectives of breeding science Conduct a field visit to learn about plant pollination	The student should be able to understand the basics of plant breeding.	Lecture with explanation and presentation	Oral discussion and questions
2	3	The floral system and its relationship to pedagogy and calculating the	The student should be familiar with floral systems and their differences.	Lecture with explanation and presentation	Oral discussion and questions
3	3	Learn about the floral system of self-pollinating crops	The student should be able to understand the impact and benefit	Lecture with explanation and presentation	Oral discussion and questions
4	3	Learn about the floral system of cross-pollinated crops	The student should be able to understand and distinguish between	The student should be able to benefit from	Scientific visit
5	3	Implementing taxes on some self-pollinating crops	Identifying male sterility and conducting crosses on some self-	Lecture with explanation and presentation	Oral discussion and questions
6	3	Conducting taxes on some cross-pollinated crops	Practical application of chromosome duplication	Learn how to breed the Shelami wheat crop	Oral discussion and questions
7		None	First-month exam	None	none

8	3	Field identification of vegetatively pollinated crops	The student should be able to distinguish between vegetatively	Scientific visit	Discussion between students and between
9	3	Practical examples of hybrid vigor and indoor breeding in self-pollinated and	The student should be able to solve problems related to hybrid strength.	Lecture with explanation, presentation and problem	Oral discussion in the classroom
10	3	A field visit to learn about fodder and vegetatively reproductive plants	The student should be familiar with the plant species present in the field	Scientific visit	Discussion between students and between
11	3	Using backcrossing to transfer resistance traits and field visits to identify and	The student should be able to choose the appropriate educational method	Practical application in the field	Assign students to feminize some flowers
12	3	Inheritance accounts of all kinds	The student should be able to calculate the retention factor and know the	Lecture with explanation and presentation	Oral discussion and questions
13	3	None	Second month exam	none	None
14	3	Identify the reasons for different heritability values	The student should be able to understand the types of inheritance	Lecture with explanation and presentation	Oral discussion and questions
15	3	Genetic mutations, their types and benefits of using them in breeding	The student should be familiar with the types of genetic mutations and their	Lecture with explanation and presentation	Oral discussion and questions

11. Course Evaluation
The grade is distributed out of 100 based on the student's assigned tasks, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for attendance, participation, and answering oral questions

12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	Plant breeding and improvement. Written by Dr. Medhat Al-Sahuki and others
Main references (sources)	Breeding and improving field crops. Hamid Glob Ali
Recommended supporting books and references (scientific journals, reports...)	
Electronic references, websites	Some research and articles on plant breeding and improvement

Theoretical Course Description

1. Course Name:	
Mycology/ 2	
2. Course Code:	
Myco306	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
10/1/2025	
5. Available Attendance Forms:	
Class Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Two hours weekly, 2 Units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Dr. Yehya A. Salih yehya.salih@uobasrah.edu.iq	
8. Course Objectives	
• Identify the different fungi • Learn about the classification and division of fungi • Highlight the main pathogenic fungus of plant diseases • Teaching students, the basic concepts of fungi • Teach students the economic importing of fungi and their relationship to plant protection major	
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in the classroom. • Presentations and video materials. • Discussions taking place inside the room. • Problem-based learning, inquiry and brainstorming. • Learning based on reports and projects. • Conducting sudden rapid exams to test student information

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Class Plectomycetes characteristics, classification, importance, orders and families	Theoretical lecture Presentation Student Discussion	Theoretical lecture Presentation Student Discussion	Discussion and oral questions about what they addressed in the first chapter
Second	2 hours	Class Pyrenomycetes , features and classification, orders: Xylariales, Hypocreales, Clavicipitales, Ophiostomatales and Diaporthales	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion with students and quiz
Third	2 hours	Class Operculate Discomycetes, classification and features, order: Pezizales and their families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Fourth	2 hours	Class Inoperculate Discomycetes, classification and features, order: Helotiales and their families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Fifth	2 hours	Class Loculoascomycetes, classification and features, some orders and families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Sixth	2 hours	Phylum Basidiomycota, characteristics and importance, basidiospores producing, sexual and asexual reproduction	Theoretical lecture Presentation Student Discussion	Theoretical lecture Presentation Student Discussion •	Discussion and oral questions
Seventh	2 hours	**First Monthly Exam**	None	**None**	**None**
Eighth	2 hours	Class Urediniomycetes, order Uredinales, it's importance, features, classification and families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions for students and linking this lecture to previous lectures

Ninth	2 hours	Class Ustilaginomycetes, order Ustilaginales, it,s importance, classification and families. Comparison between Urediniomycetes and Ustilaginomycetes	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Tenth	2 hours	Class Homobasidiomycetes and series, classification and features, orders like Agaricales and their families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Comparison between rust fungi and smut fungi
Eleventh	2 hours	Class Heterobasidiomycetes, classification and features, orders: Ceratobasidiales, Dacremycetales and Tremellales	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion ,oral questions and introducing students to what is present of this fungus in our environment
Twelfth	2 hours	Phylum Deuteromycota, importance, characteristics and classification	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Thirteenth	2 hours	Second Monthly Exam	None	None	None
Fourteenth	2 hours	Form class Hyphomycetes, classification, importance, features, orders and families	Theoretical lecture Presentation Student Discussion		Discussion and oral questions
Fifteenth	2 hours	Form classes Coelomycetes and Agonomycetes, their features, classification, orders and families	Theoretical lecture Presentation Student Discussion	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam
40 marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Introduction to fungi
Recommended Books and References (Scientific Journals, Reports...)	Mycology

Electronic References, Websites	Internet

Practical Course Description

1. Course Name:
Mycology Practical / Practical
2. Course Code:
Myco306
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
10/1/2025
5. Available Attendance Forms:
Attendance within the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
Three hours weekly / One and a half unit (1.5)
7. Course Administrator's Name (Mention All, If More Than One Name)
Dr. Najlaa Hussein Mohammed najlaa.mohammed@uobasrah.edu.iq
8. Course Objectives

• Teaching students, the necessary practical skills to diagnose field crop diseases. • Alternative: Educating students on the practical skills required for the diagnosis of field crop diseases. • Training students to isolate and diagnose fungal and bacterial pathogens. • Alternative: Providing students with training in the isolation and diagnosis of fungal and bacterial disease-causing agents.	

9. Teaching and Learning Strategies

Strategy	• Practical lectures within the laboratory and field visits. • Alternative: Laboratory-based practical sessions and field trips. • Presentations and educational films. • Alternative: Presentation and educational videos. • Group discussions. • Alternative: Collaborative discussions. • Problem-based learning and practical experimentation. • Alternative: Problem-solving and hands-on experience.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Class Plectomycetes characteristics, classification, importance, orders and families	Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions
2	3	Class Pyrenomycetes, features and classification, orders: Xylariales, Hypocreales, Clavicipitales, Ophiostomatales and Diaporthales	Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions
3	3	Class Operculate Discomycetes, classification and features, order: Pezizales and their families	Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions

4	**3**	Class Inoperculate Discomycetes, classification and features, order: Helotiales and their families	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
5	**3**	Class Loculoascomycetes, classification and features, some orders and families	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
6	**3**	First monthly exam	**None**	**None**	**None**
7	**3**	Phylum Basidiomycota, characteristics and importance, basidiospores producing, sexual and asexual reproduction	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
8	**3**	Class Urediniomycetes, order Uredinales, it's importance, features, classification and families	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
9	**3**	Class Ustilaginomycetes, order Ustilaginales, it,s importance, classification and families. Comparison between Urediniomycetes and Ustilaginomycetes	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
10	**3**	Class Homobasidiomycetes and series, classification and features, orders like Agaricales and their families	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
11	**3**	Class Heterobasidiomycetes, classification and features, orders: Ceratobasidiales, Dacremycetales and Tremellales	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
12	**3**	Phylum Deuteromycota, importance, characteristics and classification	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
13	**3**	Second monthly exam	**None**	**None**	**None**
14	**3**	Form class Hyphomycetes, classification, importance, features, orders and families	**Practical lecture, discussion, comprehensive practical training**	**Practical lecture, presentation**	**Discussion and oral questions**
15	**3**	Form classes Coelomycetes and Agonomycetes, their features, classification, orders and families	**Practical lecture, discussion, comprehensive practical training**	**Practical lecture, presentation**	**Discussion and oral questions**
11. Course Evaluation					

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, and written exams, reports, etc. 5 marks for attendance, participation, and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 20 marks for the final exam

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Introduction to Fungi
Recommended Books and References (Scientific Journals, Reports...)	Mycology
Electronic References, Websites	Internet

Theoretical Course Description

1. Course Name:	
Apiculture	
2. Course Code	
APCU317	
3. Semester/Year	
Second Semester / 2024-2025	
4. Date of Preparation	
10/01/2025	
5. Available Attendance Forms	
Classroom Attendance	
6. Number of Class Hours (Total) / Number of Units (Total)	
Two hours per week / Two units	
7. Name of Course Supervisor (If more than one name is provided)	
Name: Asst. Prof. Dr. Mohammed Alwan Salman Email: mohammed.salman@uobasrah.edu.iq	
8. Course Objectives	
1 - Enabling students to acquire knowledge and understanding of the subject of the science of Apiculture . 2- Enable students to obtain knowledge and understanding of the relationship between beekeeping and the plants and the environment 3- Introducing the student to laboratory work, applying theoretical information and linking it to the reality of work	
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in the classroom. • Presentations and video materials. • Discussions taking place inside the room. • Problem-based learning, inquiry and brainstorming. • Learning based on reports and projects. • Conducting sudden rapid exams to test student information

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Learning History of honey bees	History of honey bees	Theoretical lecture Presentation Student	Discussion and oral questions about what
Second	2 hours	Learning Economic importance	Economic importance	• Theoretical lecture • Presentation • Student Discussion	Discussion with students and quiz
Third	2 hours	Learning Morphology and anatomy of a honey bee	Morphology and anatomy of a honey bee	• Theoretical lecture • Presentation • Student	Discussion and oral questions
Fourth	2 hours	Learning Biological behavior of honey bees	Biological behavior of honey bees	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Fifth	2 hours	Learning Groups of honey bee	Groups of honey bee	• Theoretical lecture • Presentation • Student	Discussion and oral questions
Sixth	2 hours	Learning Honey bee products	Honey bee products	Theoretical lecture Presentation Student	Discussion and oral questions
Seventh	2 hours	None	First Monthly Exam	None	None
Eighth	2 hours	Learning Reproduction of honey bee	Reproduction of honey bee	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions for students and linking

Ninth	2 hours	Learning Beekeeper works	Beekeeper works	• Theoretical lecture • Presentation • Student	Discussion and oral questions
Tenth	2 hours	Learning Honey bee food sources	Honey bee food sources	• Theoretical lecture • Presentation • Student Discussion	Comparison between rust fungi and smut fungi
Eleventh	2 hours	Learning Factors affecting of honey bee activity	Factors affecting of honey bee activity	• Theoretical lecture • Presentation • Student Discussion	Discussion , oral questions and introducing
Twelfth	2 hours	Learning Queen production and Mating	Queen production and Mating	• Theoretical lecture • Presentation	Discussion and oral questions
Thirteenth	2 hours	Learning Pests and diseases of	Pests and diseases of bees	None	None
Fourteenth	2 hours	Learning Bee poisoning	Bee poisoning		Discussion and oral
Fifteenth	2 hours	None	Second monthly exam	• Theoretical lecture • Presentation • Student	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam
40 marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	- Beekeeping and silkworm --Author : Loai K. Al Naji
Main References (Sources)	- Beekeeping -- Author : Abdul Baki M. Al Ali
Recommended Books and References (Scientific Journals, Reports...)	

Practical Course Description

1. Course Name:
Apiculture/ Practical
2. Course Code
APCU317
3. Semester/Year
Second Semester / 2024-2025
4. Date of Preparation
10/01/2025
5. Available Attendance Forms
Classroom Attendance
6. Number of lab Hours (Total) / Number of Units (Total)
Three hours per week / One and a half units
7. Name of Course Supervisor (If more than one name is provided)
Name: Asst. Prof. Dr. Mohammed Alwan Salman Email: mohammed.salman@uobasrah.edu.iq
8. Course Objectives

1 - Enabling students to acquire knowledge and understanding of the subject of the science of Apiculture . 2- Enable students to obtain knowledge and understanding of the relationship between beekeeping and the plants and the environment 3- Introducing the student to laboratory work, applying theoretical information and linking it to the reality of work	

9. Teaching and Learning Strategies

Strategy	• Practical lectures within the laboratory and field visits. • Alternative: Laboratory-based practical sessions and field trips. • Presentations and educational films. • Alternative: Presentation and educational videos. • Group discussions. • Alternative: Collaborative discussions. • Problem-based learning and practical experimentation. • Alternative: Problem-solving and hands-on experience.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Learning Introduction of the honeybee colony	Introduction of the honeybee colony	• Practical lecture, presentation	Discussion and oral questions
2	3	Learning Conditions for creating honeybee colonies	Conditions for creating honeybee colonies	• Practical lecture, presentation	Discussion and oral questions
3	3	Learning Types of colonies used in beekeeping	Types of colonies used in beekeeping	• Practical lecture, presentation	Discussion and oral questions
4	3	Learning Beekeeping equipment	Beekeeping equipment	Practical lecture, presentation	Discussion and oral questions
5	3	Learning Honey bee colonies checking	Honey bee colonies checking	Practical lecture, presentation	Discussion and oral questions
6	3	Learning Swarming	Swarming	Practical lecture, presentation	Discussion and oral questions
7	3	None	first monthly exam	None	None
8	3	Learning Division of honey bee colonies	Division of honey bee colonies	Practical lecture, presentation	Discussion and oral questions
9	3	Learning Uniting of honeybee colonies	Uniting of honeybee colonies	Practical lecture, presentation	Discussion and oral questions

10	**3**	Learning Lying workers	Lying workers	**Practical lecture, presentation**	**Discussion and oral questions**
11	**3**	Learning Queens production	Queens production	**Practical lecture, presentation**	**Discussion and oral questions**
12	**3**	Learning Candy feeding for honey bee colonies	Candy feeding for honey bee colonies	**Practical lecture, presentation**	**Discussion and oral questions**
13	**3**	Learning Protein feeding for honey bee colonies	Protein feeding for honey bee colonies	**Practical lecture, presentation**	**Discussion and oral questions**
14	**3**	Learning Wintering of bee colonies	Wintering of bee colonies	**Practical lecture, presentation**	**Discussion and oral questions**
15	**3**	None	Second monthly exam	**Practical lecture, presentation**	**Discussion and oral questions**

11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, and written exams, reports, etc.
5 marks for attendance, participation, and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	- Beekeeping and silkworm --Author : Loai K. Al Naji
Main References (Sources)	- Beekeeping -- Author : Abdul Baki M. Al Ali
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

course description

Course name .1	
Plant nematodes / Theory	
Course code .2	
NEMA320	
Semester/Year .3	
Second semester / 2024-2025	
Date of preparation of this description .4	
2025/01/02	
Available forms of attendance .5	
Attendance in classrooms	
Number of study hours (total) / Number of units (total) .6	
hours per week / 2 units 2	
Name of the course supervisor (if more than one name is mentioned) .7	
:Name Asst. Dr. Ali Zuhair Abdul Email: ali.abd@uobasrah.edu.iq	
Course objectives .8	
• . students to nematodes Introducing • Teach students about the losses .caused by nematodes • Teaching students the most important orders of nematodes that .infect plants • Teaching students about the most important nematodes that infect .plants • Teaching students the trick of .controlling plant nematodes	Course objectives
Teaching and learning strategies .9	

• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Learning based on problem solving, inquiry and brainstorming. • Report and project based learning.	Strategy

Course structure .10

Evaluation method	Learning method	Name of unit or topic	Required learning	watches	week
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion	General Introduction	Students will be able to identify the basic aspects of plant .nematodes	hours 2	the first
Oral discussion and questions	• Theoretical lecture • Presentation Group discussion	Losses caused by nematodes	Students will be able to identify the losses .caused by nematodes	hours 2	the second
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion	Nematode body structure 1	Students will be able to identify the types of digestive and .reproductive systems	hours 2	the third
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	Nematode body structure 2	Students will be able to identify the types of nervous and excretory .systems	hours 2	Fourth
nothing	• nothing	First monthly exam	nothing	hours 2	Fifth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	Nematode movement, nematode oocysts, nematode feeding	Students will be able to identify the most important functions of .nematodes	hours 2	Sixth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	Nematode classification	Students will be able to identify the major orders of nematodes .that infect plants	hours 2	Seventh
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	The most important types of nematodes that infect plants below ground level	Students will be able to identify the major types of below-ground .nematodes	hours 2	The eighth

Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion Video	The most important types of nematodes that infect plants above ground level	Students will be able to identify the major types of above-ground .nematodes	hours 2	Ninth
nothing	• nothing	Second monthly exam	nothing	hours 2	tenth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	virus-carrying nematodes	Students will be able to identify the types of nematodes that .transmit viruses	hours 2	eleventh
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion Video	The relationship of nematodes with other organisms	Students will be able to identify the relationship between nematodes .and other pathogens	hours 2	twelfth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	Nematodes as a biocontrol agent	Students will be able to identify insect-parasitic .nematodes	hours 2	thirteenth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	biological nematode control	Students will be able to identify agricultural and biological nematode control .methods	hours 2	fourteenth
Oral discussion and questions	• Theoretical lecture • Presentation • Group discussion • Video	Chemical nematode control	Students will be able to identify chemical nematode control .methods	hours 2	fifteenth

Course Evaluation .11

The grade is distributed out of 100 based on the tasks assigned to the student, .such as daily preparation, daily, oral, monthly and written exams, reports, etc
marks for attendance, participation and answering oral questions 5
marks for reports and projects 5
marks for the first monthly exam 10
marks for the second monthly exam 10
marks for the final exam 30
Total 60 points
degrees for the practical part 40

Learning and teaching resources .12

Al-Zarri, Abdul-Jawad and Abdul-Hamid Tarabiah. 1981. Nematodes,	Required textbooks (methodology if (available
Plant nematodes in Arab countries	Main References (Sources)

Journal of nematology	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites

Course Description

Course name .1
Plant Nematodes / Practical
Course code .2
NEMA320
Semester/Year .3
Second semester / 2024-2025
Date of preparation of this description .4
2025/01/02
Available forms of attendance .5
Attendance in the laboratory and field visits
Number of study hours (total) / Number of units (total) .6
Three hours per week / one and a half (1.5) units
Name of the course administrator (if applicable) More than one name is .7 (mentioned
Name: Asst. Dr. Ali Zuhair Abdul :Emailali.abd@uobasrah.edu.iq
Course objectives .8

• the practical Teaching students aspects of methods for sampling .nematodes from the field • Teach students the basic aspects of .specimen preservation methods • Teach students the basic aspects of methods for isolating nematodes . from soil and plant tissues • Teach students methods for preserving, killing, and immobilizing .nematodes • Teaching students the engineering aspects of preparing temporary and	Course objectives

Teaching and learning strategies .9

• Practical lectures in the laboratory and field visits. • Presentations and video materials. • Group discussions. • Learning based on problem solving, inquiry and brainstorming. • Report and project based learning.	Strategy

Course structure .10

Evaluation method	Learning method	Name of unit or topic	Required learning	watches	week
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	General Introduction Methods for taking soil and plant samples containing nematodes	Students will be able to identify the general requirements for .nematode sampling	hours 3	the first
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Methods for preserving soil and plant samples infected with nematodes	Students will be able to identify methods for preserving specimens .containing nematodes	hours 3	the second
Participate in the isolation process	• Practical lecture • Presentation	Methods of isolating nematodes from soil	Students will be able to isolate nematodes from .soil	hours 3	the third

Participate in the isolation process	• Practical lecture • Presentation	Methods of isolating nematodes from plants	Students will be able to isolate nematodes from .plants	hours 3	Fourth
nothing	• nothing	First monthly exam	nothing	hours 3	Fifth
Participate in the process of preparing solutions	• Practical lecture • Presentation •	Solutions used to immobilize nematodes	Students will be able to identify the solutions used to immobilize .nematodes	hours 3	Sixth
Oral discussion and questions	• Practical lecture • Presentation • Video presentations	Preparing temporary slides for nematodes	Students will be able to capture and prepare temporary slides of .nematodes	hours 3	Seventh
Oral discussion and questions	• Practical lecture • Presentation • Video presentations	Preparing permanent slides for nematodes	Students will be able to collect and prepare permanent slides of .nematodes	hours 3	The eighth
Oral discussion and questions	• Practical lecture • Presentation • Video presentations	Plant symptoms of nematode infection	Students will be able to identify the main symptoms of nematode .infection	hours 3	Ninth
nothing	• nothing	Second monthly exam	nothing	hours 3	tenth
Participate in the perineal pattern work	• Practical lecture • Presentation • Video presentations	Taxonomic methods of root-knot nematodes	Students will be able to differentiate between types of root-knot nematodes and create a perianth pattern for .root-knot nematodes	hours 3	eleventh
The students were asked to isolate the wheat affected by warts and examine it	• Practical lecture • Presentation • Video presentations	wheat wart nematode	Students will be able to identify wheat wart .nematodes	hours 3	twelfth
Oral discussion and questions	• Practical lecture • Presentation • Video presentations	The most important types of nematodes below the soil surface	Students will be able to identify the major types of nematodes below .the soil surface	hours 3	thirteenth

Oral discussion and questions	**• Practical lecture • Presentation Video presentations**	**The most important types of nematodes above the soil surface**	**Students will be able to identify the major types of nematodes above .the soil level**	**hours 3**	**fourteenth**
Oral discussion and questions	**• Group discussion • Answering students' inquiries**	**Plant nematode control**	**Students should be aware of the most important types of methods for controlling .plant nematodes**	**hours 3**	**fifteenth**

Course Evaluation .11

The grade is distributed out of 100 based on the tasks assigned to the student, .such as daily preparation, daily, oral, monthly and written exams, reports, etc
marks for attendance, participation and answering oral questions 5
marks for reports and projects 5
marks for the first monthly exam 5
marks for the second monthly exam 5
marks for the final exam 20
Total 40 points
degrees for the theoretical part 60

Learning and teaching resources .12

Al-Zarri, Abdul-Jawad and Abdul-Hamid Tarabiah. 1981. Nematodes,	Required textbooks (methodology if (available
Plant nematodes in Arab countries	Main References (Sources)
Journal of nematology	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites

Theoretical Course Description

1. Course Name:	
Biotechnology / Theoretical	
2. Course Code:	
BITE342	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
14/05/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Lina Kadim Mashhot	Email: lina.kadhim@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• use of biotechnology to enhance crop growth and increase food production. • Development of agricultural crops that withstand harsh environmental conditions such as drought and salinity. • Reducing the use of pesticides and chemical fertilizers, which contributes to minimizing negative impacts on the environment. • Improving the quality of crops with better nutritional properties, such as increasing vitamin content.
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures inside the classrooms. • Presentations and video materials. • Group discussions.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students learned about the concept of biotechnology and its types.**	**Biotechnology and its types and other intersecting technologies.**	**• Theoretical lecture • Presentation • discussion**	**Discussion and oral questions**
Second	2 hours	**Understanding the components of DNA and the method of genetic modification in plants.**	**Genetic modification**	**• Theoretical lecture • Presentation • discussion**	**Discussion and oral questions**
Third	2 hours	**Students learned about the benefits of biotechnology in the field of crop development.**	**Biotechnology in the field of crop development**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion, oral questions and a short exam**
Fourth	2 hours	**Students learned about the components of the cell and the relationship between genetic material, traits, and functions in living organisms.**	**The cell in a living organism**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Fifth	2 hours	**Students learned about the history of the discovery of genes and their functions.**	**Gene functions and gene language**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Sixth	2 hours	**none**	**First Month Exam**	**none**	**none**
Seventh	2 hours	**Students learned about the ways in which genetic transformation occurs in parts of the plant.**	**Methods of genetic transformation in plants**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Eighth	2 hours	**Students learned about the ways in which genetic transformation occurs in parts of the plant.**	**Continuation of the topic of methods of genetic transformation in plants**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**

Ninth	2 hours	**Students learned about the types of vectors that transport pieces of DNA.**	**The carriers**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Tenth	2 hours	**Students learned about the types of vectors that transport pieces of DNA.**	**Genetic transformation through the direct transfer of genetic material**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Eleventh	2 hours	**Students learned about the five most important techniques related to genetic engineering.**	**Genetic engineering and biotechnology**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Twelfth	2 hours	**Students learn about the applications of biotechnology in agricultural crop production.**	**techniquesApplications of biotechnological methods in agricultural crop production**	**• Theoretical lecture • Presentation • Group discussion**	**Discussion and oral questions**
Thirteenth	2 hours	**None**	**The second monthly exam**	**None**	**None**
Fourteenth	2 hours	**Students learned about what cloning is, its types, and what is meant by the re-synthesis of genetic material.**	**Copying and Duplicating**	**•Theoretical lecture •Presentation • Group discussion**	**Discussion and oral questions**
Fifteenth	2 hours		**Comprehensive review of all the lectures**		**Discussion and oral questions**

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Biotechnology. Authored by Prof. Dr. Mohamed Hamza Abbas and Assoc. Prof. Dr. Labid Abdullah Al-Saad. Plant Diseases (Basics and Advanced). Authored by Prof. Dr. Mohamed Amer Fayyadh and Prof. Dr. Mohamed Hamza Abbas.
Main References (Sources)	
Online references, websites	

Practical Course Description

1. Course Name:	
Biotechnology / Practical	
2. Course Code:	
BITE342	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
14/05/2025	
5. Available Attendance Forms:	
Attendance in the laboratory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 3.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Shatha Fadil Abd sayed	Email: shatha.sayed@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Knowledge of modern technologies, the dentify the most important modern technologies and ways to use them basis of their work, and how to use them The most important means that can enhance modern technologies

9. Teaching and Learning Strategies	
Strategy	• Practical lectures inside the study laboratories. • Presentations. • Group discussions.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Students will be able to identify the basic aspects of	Instructions on the nature of work in the field of biotechnology	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Second	3 hours	Students will be able to identify the most important uses of biotechnology.	Biotechnology applications	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Third	3 hours	. Students will be able to identify the most important	Methods of isolation and cultivation of	•Practical lecture •Presentation •Group discussion	**Discussion, oral questions, and a short exam**
Fourth	3 hours	. Methods used to measure biomass	Biomass estimation	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Fifth	3 hours	.none	.	**none**	**none**
Sixth	3 hours	. Students will be able to identify the most important pests that affect corn and the extent of their danger to this economic crop.	. Methods used to measure biomass	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Seventh	3 hours	Students will be able to identify P.C.R.	Polymerase Chain Reaction P.C.R. الـ	**Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Eighth	3 hours	. Students will be able to identify the most important types of proteins and the organisms that produce them.	Protein and its producing organisms	**Practical lectur • Presentation • Group discussion**	**Oral discussion and questions**
Ninth	3 hours	.none		**none**	**none**
Tenth	3 hours	Students will be able to identify the importance of modern technology used in biofuels.	. Algae and biofuel: a modern	**Practical lectur •Presentation •Group discussion**	**Discussion, oral questions**

Eleventh	**3 hours**	. Students will be able to identify the importance of modern technology used in biofuels.	. Enzyme producti using solid-state	**Practical lectur** **• Presentation** **• Group discussion**	**Discussion, questions and a short quiz**
Twelfth	3 hours	. Students will be able to identify the importance of cloning.	Biofuel	**Practical lectur** **• Presentation** **• Group discussion**	**Oral discussion, questions**
Thirteenth	3 hours	Students will be familiar with solid state fermentations	Solid-state fermentations	**Practical lectur** **• Presentation** **• Group discussion**	**Oral discussion, questions**

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc.
5 points for reports and forms
7.5 points for the first monthly exam
7.5 points for the second monthly exam
20 points for the final exam
40 points total
60 points for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Biotechnologies
Main References (Sources)	

4th Level

Theoretical Course Description

1. Course Name:	
Horticultural plant diseases	
2. Course Code:	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
5/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr.Abdulnabi .A.Matrood Email abdul_nabi.matrwod@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	**• Teach students about the most important diseases affecting orchards.** **• Teach students how to diagnose diseases** **• Teach students how to combat diseases affecting orchards.**

9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject	Learning Method	Evaluation Method
First	2 hours	Identifying diseases that have historically affected orchards	A historical overview of orchard diseases	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to identify the most important terms used in orchard diseases.	The most important terms in orchard diseases	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	**Students will be able to identify diseases affecting the nightshade family.**	**Diseases affecting wheat and barley1**	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	**Students will be able to identify diseases affecting the legume family.**	**Diseases affecting wheat and barley2**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Students will be able to identify diseases that affect wheat and barley.**	**Diseases affecting wheat and barley 3**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	**Students will be able to identify diseases that affect rice.**	**Diseases affecting rice 1**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	2 hours	None	First Monthly Exam	None	None
Eighth	2 hours	**Students will be able to identify diseases that affect rice.**	**Diseases affecting rice 2**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**Students will be able to identify diseases that affect yellow corn.**	**Diseases affecting yellow corn**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Tenth	2 hours	**Students will be able to identify diseases affecting white corn.**	**Diseases affecting white corn**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	**Students will be able to identify diseases affecting sesame crops.**	**Diseases affecting sesame crops**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	**Students will be able to identify diseases that affect sugar crops.**	**Sugar crop diseases.**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	**Students will be able to identify diseases affecting fiber crops.**	**Fiber crop diseases**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None
Fifteenth	2 hours	None	General Review	• Group discussion • Answering students' questions	None

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Ivar L.O. 2013. Aquaculture Engineering. John Wiley & Sons, Ltd.
Recommended Books and References (Scientific Journals, Reports...)	Misra R. and Dora K.C. 2015. A text Book on Aquaculture Engineering,
Electronic References, Websites	https://www.fao.org/fishery/ar

Course Description

Course name .1	
Practical crop diseases	
Course code .2	
Semester/Year .3	
Second semester / 2024-2025	
Date of preparation of this description .4	
Available forms of attendance .5	
Attendance in the laboratory and field visits	
Number of study hours (total) / Number of units (total) .6	
Three hours per week / one and a half (1.5) units	
Name of the course administrator (if applicable) More than one name is .7 (mentioned	
Course objectives .8	
•	Course objectives
Teaching and learning strategies .9	
• Practical lectures in the laboratory and field visits. • Presentations and video materials. • Group discussions. • Learning based on problem solving, inquiry and brainstorming. • Report and project based learning.	Strategy
Course structure .10	

Evaluation method	Learning method	Name of unit or topic	Required learning	watches	week
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	guidelines for plant pathology laboratory	The student should know the things that must be taken into account in the plant .pathology laboratory	hours 3	the first
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Wheat diseases: rusts and smuts	The student should be aware of the most important wheat .diseases	hours 3	the second
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Wheat diseases: powdery mildew, wheat mosaic, and wheat warts	The student should be aware of some .wheat diseases	hours 3	the third
Oral discussion and questions	• Practical lecture • Presentation Group discussion	Barley diseases: Arcot disease, net blotch, and spotting	The student should be familiar with some .diseases of the crop	hours 3	Fourth
	•	First month exam	nothing	hours 3	Fifth
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Yellow and white corn diseases	The student should be familiar with the most important diseases of yellow .and white corn	hours 3	Sixth
Oral discussion and questions	• Practical lecture • Presentation Group discussion	Sunflower diseases	The student should be aware of the most important diseases of .sunflowers	hours 3	Seventh

Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Sugarcane diseases	The student should be aware of the most important sugarcane .diseases	hours 3	The eighth
Oral discussion and questions	• Practical lecture • Presentation Group discussion	Field pistachio diseases	The student should be familiar with the most important diseases of field .pistachios	hours 3	Ninth
		February exam	nothing	hours 3	tenth
Oral discussion and questions	• Practical lecture • Presentation • Group	Soybean diseases	The student should be familiar with the most important .soybean diseases	hours 3	eleventh
Oral discussion and questions	• Practical lecture • Presentation • Group	Sesame diseases	The student should be aware of the most important sesame .diseases	hours 3	twelfth
Oral discussion and questions	• Practical lecture • Presentation • Group discussion	Fiber crop diseases	The student will be able to identify the most important diseases of fiber .crops	hours 3	thirteenth
Oral discussion and questions	• Practical lecture • Presentation Group discussion	Broad bean diseases	The student should know the most important diseases of .fava beans	hours 3	fourteenth
Oral discussion and questions	• Practical lecture • Presentation Group discussion	Jet diseases	The student should be familiar with the most important .diseases of the body	hours 3	fifteenth
Course Evaluation .11					

The grade is distributed out of 100 based on the tasks assigned to the student, such as .daily preparation, daily, oral, monthly and written exams, reports, etc marks for attendance, participation and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 5 marks for the final exam 20 Total 40 points degrees for the theoretical part 60

Learning and teaching resources .12	
There is no textbook	Required textbooks (methodology if (available
plant diseases Abdulnabi Abdul Amir is expelled	Main References (Sources)
Plant diseases Acryloides	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites

Theoretical Course Description

1. Course Name:	
Pesticide / Theoretical	
2. Course Code:	
PEST434	
3. Semester / Year:	
First Semester / 2024-2025	
4. Description Preparation Date:	
25/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total)/Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Alaa Hassan Radhi	Email: alaa.hassan@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	1. **Introducing students to the concept of pesticides and their types:** ○ Understanding the classification of pesticides (insecticides, fungicides, herbicides). ○ Knowing their sources, chemical composition, and mode of action. 2. **Studying the behavior of pesticides in the environment:** ○ Understanding how pesticides move and interact in soil, water, and plants. ○ Evaluating their impact on the environment and biological balance. 3. **Learning pesticide application methods:** ○ Training on spraying techniques and safe application. ○ Selecting the appropriate method based on the type of pest and crop. 4. **Raising awareness of health and environmental risks:** ○ Discussing the acute and chronic toxicity of pesticides on humans and animals. ○ Learning safety and precautionary measures during use. 5. **Evaluating pesticide efficacy and pest resistance:** ○ Studying how pests develop resistance to pesticides. ○ Analyzing resistance management programs and strategies to reduce overuse. 6. **Understanding laws and regulations related to pesticides.**
9. Teaching and Learning Strategies	

Strategy	• Delivering theoretical lectures interactively. • Conducting presentations. • Encouraging participation in discussions by all students. • Using brainstorming in the teaching process. • Applying report- and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Students are introduced to the historical background and timeline of pesticide use, and the benefits of their application.	**Introduction**	**Lecture Presentation Group discussion**	**Oral discussion and questions**
Second	2 hours	**Students learn about toxicology and its types in the agricultural, medical, and industrial fields.**	**Toxicology**	**Lecture Presentation Group discussion**	Oral discussion and questions
Third	2 hours	**Students will be able to understand the types of pesticide preparations.**	**Pesticide formulations**	**Lecture Presentation Group discussion**	Oral discussion and questions
Fourth	2 hours	**Students will be able to identify inorganic pesticides and their importance.**	**Inorganic insecticides**	**Lecture Presentation Group discussion**	Oral discussion and questions
Fifth	2 hours	**Students will be able to identify organic pesticides and pesticide generations.**	**Organic insecticides**	**Lecture Presentation Group discussion**	Oral discussion and questions
Sixth	2 hours	**Students will be able to identify fungicides.**	**Fungicides**	**Lecture Presentation Group discussion**	Oral discussion and questions
Seventh	2 hours	**Examination 1**	**-**	**-**	-
Eighth	2 hours	**Students will be able to identify chemical pesticides.**	**Chemical pesticides used to control the most important non-insect animal pests**	**Lecture Presentation Group discussion**	Oral discussion and questions

Ninth	2 hours	**Students will be able to identify the most important methods of analyzing pesticides and their residues.**	**Pesticide analysis**	**Lecture Presentation Group discussion**	Oral discussion and questions
Tenth	2 hours	**Students will be able to identify how resistance to pesticides develops in organisms.**	**Pest resistance to pesticides**	**Lecture Presentation Group discussion**	Oral discussion and questions
Eleventh	2 hours	**Students will be able to identify how pesticides are activated and what their antagonists are.**	**Pesticide Activators and Antagonists**	**Lecture Presentation Group discussion**	Oral discussion and questions
Twelfth	2 hours	**Students will be able to identify organic pesticides extracted from plants.**	**pesticides extracted from plants.**	**Lecture Presentation Group discussion**	Oral discussion and questions
Thirteenth	2 hours	**Students will be able to identify chemical sterilizers and nutrient inhibitors.**	**chemical sterilizers and nutrient inhibitors.**	**Lecture Presentation Group discussion**	Oral discussion and questions
Fourteenth	2 hours	**Examination 2**	**-**	**-**	**-**
Fifteenth	2 hours	**Students will be able to identify and understand the most important methods of bio-evaluation of pesticides.**	**Bioassay**	**Lecture Presentation Group discussion**	Oral discussion and questions

11. Course Evaluation

Distribution of 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.
5marks for attendance, participation and answering oral questions
5marks for reports and projects
10marks for the first monthly exam
10marks for the second monthly exam
30marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Al-Adel, K.M.,(2006). Pesticides. Basic Concepts and their roles in the agricultural and healthy Fields. College of Agriculture- University of Baghdad. 421PP.	
Shaaban, A. and Al-Malah, N.M. (1993). Pesticides. House of Books for Printing and Publishing. The University of Mosul. 520PP.	
Websites	

PracticalCourse Description

1. Course Name:	
Pesticide / Practical	
2. Course Code:	
PEST434	
3. Semester / Year:	
First Semester / 2024-2025	
4. Description Preparation Date:	
2/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total)/Number of Units (Total)	
3 hours per week / 1.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Sadiq Jwad Muhammed	Email: muslim.abdel_wahed@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Training students to identify pests and select the appropriate pesticide. • Introducing the different formulations of pesticides. • Teaching students how to use pesticides in both the laboratory and the field. • Training students to calibrate sprayers to apply the appropriate amount of pesticide. • Conducting bioassays for pests. • Teaching students how to read and understand pesticide labels.
9. Teaching and Learning Strategies	

Strategy	• Practical lectures in the laboratory and field visits. • Presentations and video materials. • Group discussions. • Problem-solving, inquiry-based learning, and brainstorming. • Report- and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	**Students will be able to classify pesticides.**	**Principles of pesticide classification.**	**Display models of pesticide sections**	Discussion and oral questions
Second	3 hours	**Students will be able to understand the concepts of toxicity, especially LC50, LD50.**	**Toxicology**	**Lecture Presentation Group discussion**	Discussion and oral questions
Third	3 hours	**Students will be able to identify all pesticides.**	**Pesticide formulations**	**Lecture Presentation Group discussion**	Discussion and oral questions
Fourth	3 hours	**Students will be able to read the pesticide label.**	**The pesticide label… the importance and compositions.**	**Lecture Presentation Group discussion**	Discussion and oral questions
Fifth	3 hours	**Students will be able to perform a physical and chemical examination.**	**Physiochemical tests**	**Lecture presentation Conducting the experiment**	Discussion and oral questions
Sixth	3 hours	**Students will be able to identify pesticide metabolisms.**	**Pesticide metabolism**	**Lecture Presentation Group discussion**	Discussion and oral questions
Seventh	3 hours	**Examination 1**	**Examination 1**	**-**	-
Eighth	3 hours	**Students will be able to understand the mechanism of toxic effects of pesticides.**	**Mechanism of toxic effects of pesticides.**	**Lecture Presentation Group discussion**	Discussion and oral questions
Ninth	3 hours	**Students will be able to distinguish between liquid concentrates and their dispersion.**	**pesticide emulsion stability**	**Lecture Conducting the experiment**	Discussion and oral questions
Tenth	3 hours	**Students will be able to take the Bioassay.**	**The Bioassay**	**Lecture Conducting the experiment**	Discussion and oral questions

Eleventh	3 hours	**Students will be able to evaluate fungicides.**	**Fungicides bioassay**	**Lecture presentation Conducting the experiment**	Discussion and oral questions
Twelfth	3 hours	**Students will be able to perform statistical analysis of biological experiments.**	**Statistical analysis of bioassay test results.**	**Solutions and applying different mathematical and statistical laws with charts.**	Discussion and oral questions
Thirteenth	3 hours	**Students are able to analyze pesticides and their remains and reveal the differences between them.**	**Pesticide residues analysis**	**Lecture Presentation Group discussion**	Discussion and oral questions
Fourteenth	3 hours	**Examination 2**	**Examination 2**	**-**	**-**
Fifteenth	3 hours	**General review**	General review	**Lecture Presentation Group discussion**	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5marks for attendance, participation and answering oral questions
5marks for reports and projects
5marks for the first monthly exam
5marks for the second monthly exam
20marks for the final exam
40marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Al-Adel, K.M.,(2006). Pesticides. Basic Concepts and their roles in the agricultural and healthy Fields. College of Agriculture- University of Baghdad. 421PP.	
Shaaban, A. and Al-Malah, N.M. (1993). Pesticides. House of Books for Printing and Publishing. The University of Mosul. 520PP.	
Websites	

Theoretical Course Description

1. Course Name:	
Insect Ecology / Theoretical	
2. Course Code:	
INEC413	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
17/05/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Aqeel Alyousuf Email: aqeel.abd@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Understand the impact of environmental factors on insect behavior and distribution. • Explore interactions between insects and their biotic and abiotic environments. • Analyze the factors affecting insect population density and distribution. • Study the role of environment in pest outbreaks and their management. • Acquire field and laboratory skills in insect ecological research. • Understand the dynamics of insect communities and ecological balance.
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Students will be able to identify the fundamental concepts of insect ecology	Introduction to Insect Ecology	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to explain basic ecological concepts related to living organisms	Concepts of Ecology	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 hours	Students will be able to analyze the impact of environmental factors on insect life and distribution	Effect of Physical and Biological factors on the Insects	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	Students will be able to interpret the effect of temperature on insect life cycles and behavior	Effect of Temperature on the Insects	• Theoretical lecture • Presentation • Group discussion Video	Earth pond design project
Fifth	2 hours	Students will be able to evaluate the impact of humidity on insect survival and activity	Effect of Temperature on the Insects	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Sixth	2 hours	Students will be able to clarify the impact of light and other physical factors on insects	Effect of light and other physical factors on the Insects	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Seventh	2 hours	N/A	The First Month Exam	None	None
Eighth	2 hours	Students will be able to identify materials and handling methods for setting up closed aquaculture systems	Effect of Biological factors on the Insects	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	Students will be able to recognize the basics of designing and establishing an aquaponics system	Trophic relationships	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Tenth	2 hours	Students will be able to analyze the role of parasites in regulating insect communities	Parasitism	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eleventh	2 hours	Students will be able to interpret the importance of predation as an ecological regulatory	Predation	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	Students will be able to assess the environmental impact of pesticide pollution on ecological balance	Population Dynamic Ecology	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Students will be able to use life tables to analyze insect population dynamics	Life tables	• Theoretical lecture • Presentation • Group discussion Video	report
Fourteenth	2 hours	None	The Second Month Exam	None	None
Fifteenth	2 hours	None	Ecological pollution by the chemical Pesticides	• Group discussion • Answering students' questions	None

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	**بيئة الحشرات/ مولود كامل عبد/1981/ دار الكتب للطباعة والنشر-بغداد**
Recommended Books and References (Scientific Journals, Reports...)	Price, P. W. (1997). *Insect ecology*. John Wiley & Sons.
Electronic References, Websites	https://ecoipm.org/

Practical Course Description

1. Course Name:	
insect ecology	
2. Course Code:	
INEC413	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Amjed Abbas Fadhel	Email: amjed.fadhil@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	1 .Gain experience in calculating insect population density. 2. Understand the effect of environmental conditions on insects.
9. Teaching and Learning Strategies	
Strategy	•Practical lectures in the laboratory and field visits. •Presentations •Group discussions •Problem-based learning, inquiry, and brainstorming • Learning based on report writing and fieldwork
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	. Students will be able to collect insects and write down	Insect survey	Practical lecture Presentation Group discussion	Oral discussion and questions
Second	3 hours	Students will learn methods of collecting insects and how to collect	Insect survey methods and How to use samples	Practical lecture Presentation Group discussion	Students collect samples from insect-infested
Third	3 hours	Students will learn how to collect and separate insects found in plant debris.	Plant-associated insects Plant detritus insects on the soil surface	Practical lecture Presentation Group discussion	Oral discussion and questions Collecting infected samples and counting insect numbers
Fourth	3 hours	Students will be able to identify methods for separating insects from	Separating insects from plant tissues	Practical lecture Presentation Group discussion	Oral discussion and questions Collect the
Fifth	3 hours	Students will be able to estimate insect numbers in dry and moist soils.	Estimating insect numbers in soil	Practical lecture Presentation Group discussion	Discussions and Questions Bring soil from the
Sixth	3 hours	Students will be able to identify methods for estimating the numbers of internal and external parasites.	Methods for estimating insects associated with dead and living animals	Practical lecture Presentation Group discussion	Discussion between students and the subject teacher
Seventh	3 hours	nothing	First exam	nothing	nothing

Eighth	3 hours	Students will be able to identify and count insect numbers using traps.	Relative enumeration method Methods for estimating insect numbers in the	Practical lecture Presentation Video presentations	Oral discussion and questions Setting traps in the
Ninth	3 hours	Students will be able to identify the types of bait traps, the insects	Fishing Methods in Traps Bait Traps	Practical lecture Presentation Video presentations	Oral discussion and questions
Tenth	3 hours	Students will be able to identify the types of light traps, the insects attracted to them, and	light traps	Practical lecture Presentation Video presentations	Oral discussion and questions Go to the field and
Eleventh	3 hours	Students will be able to identify how to collect insects from	Estimating insect populations in aquatic environments	Practical lecture Presentation	. Discussion and oral questions
Twelfth	3 hours	Students will be able to identify how to estimate insect numbers by the	How to estimate insect numbers by infestation symptoms	Practical lecture Presentation	Discussion and questions: Collecting leaves with
Thirteenth	3 hours	Students will be able to identify how to estimate insect populations using various methods	Field Applications for Insect Population Estimation	Practical lecture Presentation	Oral discussion and questions
Fourteenth	3 hours	nothing	The second exam	nothing	nothing
Fifteenth	3 hours	Identifying the types of meteorological	"Meteorological instruments	Practical lecture Presentation	Oral discussion and
11. Course Evaluation					

Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 20 marks for the final exam 40 marks total 60 marks for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	
Recommended Books and References (Scientific Journals,	Abrams, P.A. (2001). Describing and quantifying inter-specific interactions: a commentary on recent
Electronic References, Websites	https://faculty.uobasrah.edu.iq/uploads/1651902463.pdf

theoretical Course Description

1. Course Name:
storage pests/ theoretical lesson
2. Course Code:
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
01/09/2024
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total)/Number of Units (Total)
2 hours per week
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: lecturer Iman mussa omran Email iman.omran @uobasrah.edu.iq : mohand abd alradh

Course objectives .8	
definition of pest – Economic importance of grain storage type of storage type of pests that affect stored material –inspection of grain –sample collection method –D detection of insect infestation in stored grains methods of detecting insect infections inside grain –control of stored materials	Course objectives
Teaching and learning strategies .9	

• Lecture in the hall theoretical • Presentation . • Group discussions. • . • Report-based learning and student classroom activity.	Strategy

Course structure .10

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Oral discussion and questions	**• Theoretical lecture Presentation**	definition of pest – Economic importance of grain storage type of	**Define the pest , Knowing storage methods**	**2hours**	**the first**
Group discussion with Koz for the previous lecture	**• Theoretical lecture • Presentation**	type of pests that affect stored material	**Identify the most important insect pests that affect stored products**	**hours 2**	**the second**
Oral discussion and questions with Koz for the previous lecture	**• Theoretical lecture • Presentation**	grain inspection –sample collection method	**Knowing the examination methods**	**hours2**	**the third**
Discussion and general questions on the topic	**• Theoretical lecture • Presentation**	detection of insect infestation in stored grains methods of detecting insect infections inside grain	Knowing how to detect insects feeding inside the grain	**hours2**	**Fourth**
	•		**Exam**	**hours 2**	**Fifth**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	control of stored materials	**Learn about the most important preventive and curative methods used in control**	**hours2**	**Sixth**
Discussion and general questions	**• Theoretical lecture •**	Mite - general characteristics of the mites – type of mites – control	**Identifying the mite that affects stored grains and ways to control its**	**hours 2**	**Seventh**

	•	**Exam**			**The eighth**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	"Post-harvest diseases and the extent of damage or loss in agricultural crops susceptible to post-harvest diseases	Identifying the types of diseases that affect agricultural crops after harvest.		**Ninth**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	**"**Post-harvest spoilage of fruits and vegetables, and the fungal organisms and pathogens responsible for this deterioration	Identifying strategies for the prevention and mitigation of post-harvest disease outbreaks.	**2hours**	**tenth**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	**A. *Penicillium* Fungus** 1. **Blue rot** – Caused by *Penicillium* species. 2. **Green rot** – Another common manifestation of *Penicillium* infection.	the student will be able to distinguish between different types of mold, specifically blue mold and green mold, and describe the visible symptoms of *Penicillium* infection along with its transmission methods.	**2hours**	**eleventh**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	B. ***Sclerotinia*** Fungus 1. **Cottony rot** – Characterized by white, cotton-like fungal growth. **2. Water soft rot** – A soft, watery decay caused by *Sclerotinia* under humid conditions	The student will be able to explain the signs of cottony mold and soft watery rot, and understand the fungal life cycle and its influence on fruit quality.	**2hours**	**twelfth**
General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	Fungi Causing Post-Harvest Spoilage of Grains and Legumes Various fungal species are responsible for the deterioration of grains and legumes after harvest, particularly under poor storage conditions. These include species from genera such as *Aspergillus*, *Fusarium*, and	the student will identify the fungal species responsible for the spoilage of grains and legumes after harvest, and determine the environmental and storage conditions that facilitate their growth	**2hours**	**thirteenth**

General discussion and questions with Koz on the previous topic	**• Theoretical lecture Presentation**	Post-Harvest Disease Management Post-harvest disease control includes preventive and curative strategies such as proper sanitation, temperature and humidity control, use of fungicides, and application of biological agents. Integrated management approaches are preferred for sustainability and food safety.	the student will be able to explain and evaluate various post-harvest disease prevention and control strategies, distinguishing between chemical, physical, and biological methods	**2hours**	**fourteenth**

Course Evaluation .11

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and .written exams, reports, etc
.marks for attendance, participation, and answering oral questions and quizzes 5
marks for reports 5
marks for the first monthly exam 5
marks for the second monthly exam 5
marks for the final exam 20
Total 40 points
degrees for the theoretical part 60

Learning and teaching resources .12

Warehouse Insects - Dr. Abdullah Falih Al-Azzawi and Dr. Mohammed Zahir Mahdi	Required textbooks (methodology if available)
Mycotoxins - Dr. Ismail Khalil Ibrahim	Main References (Sources)
	Recommended supporting books and references (scientific (...journals, reports
	Electronic references, websites

Practical Course Description

1. Course Name:
storage pests/ Practical
2. Course Code:
3. Semester / Year:
Frist Semester / 2024-2025
4. Description Preparation Date:
01/09/2024
5. Available Attendance Forms:
Laboratory attendance and store visits
6. Number of Credit Hours (Total)/Number of Units (Total)
3 hours per week
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: lecturer Mahmood O.Jaafer Email Mahmood.jaafar @uobasrah.edu.iq

Course objectives .8	
Introducing the student to insects and fungi that -1 .infect grain, seed and food stores Finding solutions to combat it and reduce its -2 .impact .How to check grains and stored materials -3 Knowledge of the devices used to take samples. -4 Methods of taking samples and types of -5 .examination	Course objectives
Teaching and learning strategies .9	

• Practical lectures in the laboratory and store visits. • Presentations and video materials. • Group discussions. • Learning based on observing stored insect models under the microscope. • Report-based learning and student classroom activity.	Strategy

Course structure .10

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Oral discussion and questions	**• Theoretical lecture • Viewing storage lesion samples under a microscope • Show video clips of the**	Symptoms of warehouse insect infestation and types of insect pests in warehouses	**Identify the symptoms of infection and types of insect pests**	**hours 3**	**the first**
Group discussion with Koz for the previous lecture	**• Theoretical lecture • Bringing samples of stored pests and identifying their**	The most important insects that infect stored materials	**Knowing the most important insects that cause damage to warehouses**	**hours 3**	**the second**
Oral discussion and questions with Koz for the previous lecture	**• Theoretical lecture • Bring samples of infected grains and identify the insects under a .microscope**	Southern beetle - Large bean beetle - Dry fruit beetle - Cigarette beetle	**Identifying Southern Bean Beetles - Large Bean Beetle - Dry Fruit Beetle - Cigarette Beetle and knowing the damage and methods of control**	**hours 3**	**the third**
Discussion and general questions on the topic	**• Theoretical lecture • Viewing insect models under a microscope**	Rice weevil-Grain weevil-Carpet beetle-Date bugs-Mediterranean flour moth-Moth Indian flour	**Identifying insects: rice weevil, grain weevil, carpet beetle, date bugs, Mediterranean flour moth, moth Indian flour and its differences and methods of**	**hours 3**	**Fourth**
Discussion and general questions about the topic with Koz for the previous week	**• Theoretical lecture • Watch a video of grain inspection and sampling methods, with an appointment to visit grain storage sites .(Basra Silo)**	Examination of stored grains and grains - Sampling methods	**Learn how to** inspect stored grain and seed - Sampling methods	**hours 3**	**Fifth**

General discussion and questions with Koz on the previous topic	**• Theoretical lecture Video on post-harvest diseases**	Postharvest diseases - Control of postharvest diseases - Measures to be taken to control postharvest rot in grains, seeds, fruits and vegetables dry	**Identify** post-harvest diseases **how to combat them, and , the measures that must be taken** to combat post-harvest .rot	**hours 3**	**Sixth**
Discussion and general questions With a jug for the previous topic	**• Theoretical lecture • Presentation of fungi that cause postharvest fruit rot**	The most important fungi that cause post-harvest rot in fruits and vegetables - the most important causes of rot	**Knowing** the most important fungi that cause post-harvest rot in fruits and vegetables - the most important causes of rot	**hours 3**	**Seventh**
nothing	**• nothing**	**First monthly exam**	**nothing**	**hours 3**	**The eighth**
Discussion and general questions About the topic	**• Theoretical lecture • Watch some diseases**	Some storage diseases on vegetables	**Identify** some storage diseases on vegetables	**hours 3**	**Ninth**
Discussion and general questions With a jug	**• Theoretical lecture • PowerPoint presentation of green and blue mold, showing the disease symptoms and samples to .bring to the lab**	Green mold, blue mold, and black mold in pomegranate fruits, black mold in fig fruits, .and black mold in dates fruits	**Identify the difference between** green mold and blue mold, **as well as black mold .in pomegranates and figs**	**hours 3**	**tenth**
Discussion and general questions About the topic	**• Theoretical lecture • Powerpoint presentation on potato diseases • Bring infected samples to the**	Potato diseases	**Learn about the most important** potato diseases	**hours 3**	**eleventh**
Discussion and general questions With a jug	**• Theoretical lecture • Knowing the most important toxins caused by warehouse**	Fungal toxins and poisonings	**Recognizing** toxins and fungal poisonings	**hours 3**	**twelfth**

Group discussion and general questions	**• Theoretical lecture • And identify the toxins caused by fungal diseases**	Mycotoxin prevention	**Learn how to** prevent .mycotoxins	**hours 3**	**thirteenth**
Discussion and general questions	**• Theoretical lecture • Identify storage devices**	Field visits to warehouses	**Review of the above-mentioned storage diseases that affect stored field crops**	**hours 3**	**fourteenth**
nothing	**• nothing**	**Second monthly exam**	**nothing**	**hours 3**	**fifteenth**

Course Evaluation .11

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily .preparation, daily, oral, monthly and written exams, reports, etc
.marks for attendance, participation, and answering oral questions and quizzes 5
marks for reports 5
marks for the first monthly exam 5
marks for the second monthly exam 5
marks for the final exam 20
Total 40 points
degrees for the theoretical part 60

Learning and teaching resources .12

Warehouse Insects - Dr. Abdullah Falih Al-Azzawi and Dr. Mohammed Zahir Mahdi	Required textbooks (methodology if available)
Mycotoxins - Dr. Ismail Khalil Ibrahim	Main References (Sources)
	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites

Theoretical Course Description

1. Course Name:	
Vegetable Diseases	
2. Course Code:	
VED415	
3. Semester / Year:	
First Semester / 2024-2025	
4. Description Preparation Date:	
10/9/2024	
5. Available Attendance Forms:	
Class room Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Two hours weekly, 2 Units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Dr. Yehya A. Salih yehya.salih@uobasrah.edu.iq	
8. Course Objectives	
• Identify the most important diseases that affect vegetable crops • Identify the pathogens of these diseases shedding light on the most important diseases prevalent in the governorate • Teaching students how to recognize the symptoms of diseases • Teaching students how to control diseases and how to protect plants	
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in the classroom. • Presentations and video materials. • Discussions taking place inside the room. • Problem-based learning, inquiry and brainstorming. • Learning based on reports and projects. • Conducting sudden rapid exams to test student information

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Introducing students to plant disease ,the factors contributing to the occurrence of the disease , how it is transmitted to the plant ,and knowing the pathogens.	Introduction to plant pathology and living and nonliving pathogens	Theoretical lecture Presentation Student Discussion	Discussion and oral questions about what they addressed in plant pathology
Second	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of tomato and potato Part 1	• Theoretical lecture • Presentation • Student Discussion	Discussion with students and quiz
Third	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of tomato and potato Part 2	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Fourth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of eggplant	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Fifth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of pepper	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Sixth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of carrot	Theoretical lecture Presentation Student Discussion •	Discussion and oral questions
Seventh	2 hours	**First Monthly Exam**	None	**None**	**None**
Eighth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of cucurbits (Cucumber, squash, melon and watermelon)	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions

Ninth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of Fabaceae (Broad beans, beans and peas	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Tenth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Disease of Brassicaceae (Cabbage, safflower and radish)	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Eleventh	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of Liliaceae (0nion and garlic)	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Twelfth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Diseases of Asteraceae	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions
Thirteenth	2 hours	Second Monthly Exam	None	None	None
Fourteenth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and	Diseases of Malvaceae		Discussion and oral questions
Fifteenth	2 hours	Students will be able to know some diseases of tomatoes and potatoes and know their pathogens and how to diagnose them	Nursery diseases (Damping-off and root rot as a model)	• Theoretical lecture • Presentation • Student Discussion	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam
40 marks total
60 marks for the theoretical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Diseases of fruits and vegetables diagnosis and management Vol. 1 & 2 2 – Orchards and vegetables diseases

Recommended Books and References (Scientific Journals, Reports...)	Plant pathology
Electronic References, Websites	Internet

Practical Course Description

1. Course Name:
Vegetable Diseases / Practical
2. Course Code:
VED415
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
10/9/2024
5. Available Attendance Forms:
Attendance within the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
Three hours weekly / One and a half unit (1.5)
7. Course Administrator's Name (Mention All, If More Than One Name)
Manal Mohamoud Qassim E-mail: manal.qassim@uobasrah.edu.iq
8. Course Objectives

• Teaching students, the necessary practical skills to diagnose the vegetable diseases. • Alternative: Educating students on the practical skills required for the diagnosis of vegetable diseases. • Training students to isolate and diagnose the fungal and bacterial pathogens that infect the vegetable plants. • Alternative: Providing students with training in the isolation and diagnosis of fungal and bacterial disease-causing agents and control them.	

9. Teaching and Learning Strategies

Strategy	• Practical lectures within the laboratory and field visits. • Alternative: Laboratory-based practical sessions and field trips. • Presentations and educational films. • Alternative: Presentation and educational videos. • Group discussions. • Alternative: Collaborative discussions. • Problem-based learning and practical experimentation. • Alternative: Problem-solving and hands-on experience.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	**3**	Students have the ability to identify and diagnose the living and nonliving pathogens	**Plant diseases and living and nonliving pathogens, isolation and diagnose**	**• Practical lecture, presentation**	**Discussion and oral questions**
2	**3**	Students have the ability to identify the symptoms of tomato and potato diseases and how to control them	**Diseases of tomato and potato**	**• Practical lecture, presentation**	**Discussion and oral questions**
3	**3**	Students have the ability to identify the symptoms of tomato and potato diseases and how to control them	**Diseases of tomato and potato (Continued)**	**• Practical lecture, presentation**	**Discussion and oral questions**

4	**3**	Students have the ability to identify the symptoms of eggplant diseases and how to control them	**Diseases of eggplant**	**Practical lecture, presentation**	**Discussion and oral questions**
5	**3**	Students have the ability to identify the symptoms of pepper diseases and how to control them	**Diseases of pepper**	**Practical lecture, presentation**	**Discussion and oral questions**
6	**3**	First monthly exam	**Diseases of carrot**	**None**	**None**
7	**3**	Students have the ability to identify the symptoms of cucurbits diseases and how to control them	**Diseases of cucurbits**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	None	**First monthly exam**	**None**	**None**
9	**3**	Students have the ability to isolate and identify the fungal pathogens	**Isolation and identification of pathogens**	**Practical lecture, presentation**	**Discussion and oral questions**
10	**3**	Students have the ability to identify the symptoms of legumes diseases and how to control them	**Diseases of legumes**	**Practical lecture, presentation**	**Discussion and oral questions**
11	**3**	Students have the ability to identify the symptoms of crucifer diseases and how to control them	**Diseases of crucifers**	**Practical lecture, presentation**	**Discussion and oral questions**
12	**3**	Students have the ability to identify the symptoms of onion and garlic diseases and how to control them	**Diseases of Liliaceae**	**Practical lecture, presentation**	**Discussion and oral questions**
13	**3**	Second monthly exam	**None**	**None**	**None**
14	**3**	Students have the ability to identify the symptoms of lettuce diseases and how to control them	**Diseases of Asteraceae**	**Practical lecture, presentation**	**Discussion and oral questions**
15	**3**	Students have the ability to identify the symptoms of okra diseases and how to control them	**Diseases of Malvaceae**	**Practical lecture, presentation**	**Discussion and oral questions**

11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, and written exams, reports, etc.
5 marks for attendance, participation, and answering oral questions
5 marks for reports and projects
5 marks for the first monthly exam
5 marks for the second monthly exam
20 marks for the final exam

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Orchards and vegetables Diseases
Recommended Books and References (Scientific Journals, Reports...)	Plant Pathology
Electronic References, Websites	Internet

Theoretical Course Description

1. Course Name:
Biological control/ Theoretical
2. Course Code:
BICO416
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
17/04/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
: **Asst. Prof. Dr. Anaa Dawood Khammass** **Proff. Jinan malik khalaf** **Email:** anaa.khamas@uobasrah.edu.iq
8. Course Objectives

Course Objectives	I-dentify biological control in its and insects. two components: diseases 2- -Identify the organisms used in biological control programs. 3- -Identify the methods used in biological control and the possibility of using insects and fungi and incorporating them ainto biological control programs in the field.

9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
First	6 hours	. Introducing students to the concept of biological	insect Sectiont - Introduction - **Biological control**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	6 hours	**The student will be able to distinguish between the**	**The emergence and development of the concept of resistance**	• Theoretical lecture • Presentation • discussion	Report on the damage of pathogens
Third	6 hours	. **. Introduce students to the types of insects used in biological**	l. Methods of parasite reproduction - Parasite behavior - Parasitic insect	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	Students will be able to identify the defenses used by parasites	**. Predators - Types of Insects Predators - Strategies**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project

Fifth	2 hours	Students will be able to distinguish	Cellular Defense Mechanism - Indirect Defense -	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	. Students will be able to distinguish the	Genetic resistance - sterility using radioactive and chemical agents - the	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	**First exam**	None	None
Eighth	2 hours	To familiarize students with the concept of	Diseases section: Bioresistance, its concept and the	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**. To learn about the ancient methods used in**	Previously used resistance strategies Microorganism	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	**Students will be able to differentiate between a**	Fungal antagonism Fungi used in antagonism	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eleventh	2 hours	**Students will be able to differentiate between**	Fungal parasitism	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	. Giving students an idea about the biological	Nematodes used in biological control	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Knowing the most important biopesticides	Production of some Biopesticide	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	6 hours	None	**Second exam**	None	None
Fifteenth	6 hours		**General review**	• **Theoretical lecture** •	**Discussion and oral questions**
11. Course Evaluation					

Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 10 marks for the first monthly exam 10 marks for the second monthly exam 30 marks for the final exam Total 60 marks 40 marks for the practical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	George N.Agreose
Online references, websites	

Practical Course Description

1. Course Name:
/ Practical
2. Course Code:
FRDS417
3. Semester / Year:
first Semester / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
6 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Lecture ; Manal Mahmood Qassim.

8. Course Objectives	
Course Objectives	I-dentify biological control in its and insects. two components: diseases 2- -Identify the organisms used in biological control programs. • 3- -Identify the methods used in biological control and the possibility of using insects and fungi and incorporating them ainto biological control programs in the field

9. Teaching and Learning Strategies	
Strategy	• brainstorming. • Report- and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	6 hours	.		•Practical lecture •Presentation •Group discussion	Oral discussion and questions
T	6 hours			•Practical lecture •Presentation •Group	Oral discussion and questions

Third	6hours			•Practical lecture •Presentation •Group	**Discussion, oral questions, and a short**
Fourth	6 hours			**•Practical lecture •Presentation •Group**	**Oral discussion and questions**
Fifth	6 hours	**.none**	**. First month exam**	**none**	**none**
Sixth	6 hours	**.**		**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions and**
Seventh	6 hour	**Identify organisms used in biocontrol programs and a brief introduction to**	**. Microorganisms in Biocontrol Bacteria: Their**	**Practical lecture •Presentation**	**Oral discussion and questions**
Eighth	6 hours	**Conducting practical experiments and determining the degree of inhibition of pathogenic fungi**	**Use of antagonism between dormant bacteria and**	**Practical lectur • Presentation • Group**	**Oral discussion and questions**
Ninth	6 hours	**Conducting antagonism experiments with pathogenic bacteria and pathogenic fungi**	**Identifying fungi used in biocontrol programs**	**Practical lectur •Presentation •Group discussion • Display fungi**	**Discussion, oral questions, and bringing models**
Tenth	**6 hours**	**Isolation of pathogens from diseased insects, their loading and testing of their potential use in biological control**	**Bacteria and fungi in control to plant pathogenic insects**	**Practical lectur • Presentation • Group discussion • models and**	**Discussion, questions and a short quiz**
Eleventh	**6 hours**	**. Isolation of pathogens of some nematodes causing plant diseases and their cultivation in**	**Nematodes in control programs**	**Practical lectur • Presentation • Group**	**Oral discussion, questions, and**
Twelfth	**6 hours**	**. Identifying virus activity using illustrative images**	**Viruses in biocontrol programs**	**Practical lectur • Presentation • Group discussion**	**Oral discussion, questions, and bringing**

Thirteenth	6 hours	**non**	**non**	**Practical lectur • Presentation • Group discussion**	**Oral discussion, questions, and samples**

11. Course Evaluation
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for reports and forms 7.5 points for the first monthly exam 7.5 points for the second monthly exam 20 points for the final exam 40 points total 60 points for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	.
Main References (Sources)	

Theoretical Course Description

1. Course Name:
FRUIT DISEASES / Theoretical
2. Course Code:
FRDS417
3. Semester / Year:

Second Semester / 2024-2025
4. Description Preparation Date:
17/04/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Asst. Prof. Dr. Anaa Dawood Khammass Asst. Prof. Dr. Layla Abdulrahim Banyan Email: anaa.khamas@uobasrah.edu.iq
8. Course Objectives

Course Objectives	1-Identify the most important diseases affecting fruit trees, especially those prevalent in the region and Iraq in particular, as well as their main symptoms, causes, and methods of control. 2- Identify the life cycle of pathogens. 3- Identify the methods used for control.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method

First	2 hours	Students will be able to identify plant disease.	Introduction - Plant Disease Symptoms -	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	The student should be able to distinguish between the	Apple and Pear Diseases, including - Apple Scab - Symptoms- Disease	• Theoretical lecture • Presentation • discussion	Report on the damage of pathogens
Third	2 hours	Students will be able to differentiate between diseases affecting different	Fire Blight - Symptoms - Disease Cycle - Control.	• Theoretical lecture • Presentation • Group discussion • Video	Discussion, oral questions and a short exam
Fourth	2 hours	Students will be able to identify economically important	. Stone-core diseases, including each disease, its	• Theoretical lecture • Presentation • Group discussion	Earth pond design project
Fifth	2 hours	Students will be able to distinguish between different	Crown and root rot, bacterial canker, stone fruit tree gummosis, walnut	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Sixth	2 hours	Students will be able to distinguish between different	, black rot, anthracnose, root knot, fan leaf, grape chlorosis	• Theoretical lecture • Presentation • Group discussion	Cage design project
Seventh	1 hours	None	First exam	None	None
Eighth	2 hours	Identify the most important diseases that affect citrus	Citrus diseases include citrus gummosis and citrus anthracnose.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Ninth	2 hours	Identify the various pathogens that	Citrus diseases include lemon wood pitting, citrus scorching, nutrient	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Tenth	2 hours	Students will be able to differentiate between diseases	:-Palm diseases include: - Al-Bayoud - Palm pollen deficiency-	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Eleventh	2 hours	Students will be able to differentiate between diseases	Olive diseases include: Bird's eye spot -	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Twelfth	2 hours	Students will be able to differentiate between the	Various diseases, including fig stem canker, fig mosaic, pistachio wilt, and	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Thirteenth	2 hours	Knowing the most important diseases that affect the fruit	Post-harvest diseases	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Fourteenth	2 hours	None	Second exam	None	None
Fifteenth	2 hours		General review	• Theoretical lecture •	Discussion and oral questions

11. Course Evaluation
Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 10 marks for the first monthly exam 10 marks for the second monthly exam 30 marks for the final exam Total 60 marks 40 marks for the practical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	George N.Agreose
Online references, websites	

Practical Course Description

1. Course Name:
/ Practical
2. Course Code:
FRDS417
3. Semester / Year:

Second Semester / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:
8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies	
Strategy	• brainstorming. • Report- and project-based learning.

10. Course Structure

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
First	3 hours	**. Students are able to identify the type of disease through symptoms.**	.apple and pear diseases1	**•Practical lecture •Presentation •Group discussion** • models and	**Oral discussion and questions**
Second	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	Apple and pear diseases 2.	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions**
Third	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	**Stone diseases1**	•Practical lecture •Presentation •Group discussion • models and	**Discussion, oral questions, and a short exam**

Fourth	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	**Stone diseases 2**	**•Practical lecture •Presentation •Group discussion**	**Oral discussion and questions and requesting samples**
Fifth	3 hours	**.none**	. **First month exam**	**none**	**none**
Sixth	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	. grape diseases	**•Practical lecture •Presentation •Group discussion • Display of fungi**	**Oral discussion and questions and requesting samples**
Seventh	3 hours	**Students will be able to distinguish between pathogens under a microscope.**	**Citrus diseases 1**	**Practical lecture •Presentation •Group discussion**	**Oral discussion and questions and samples**
Eighth	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	**Citrus diseases 2**	**Practical lectur • Presentation • Group discussion • Display models**	**Oral discussion and questions**
Ninth	3 hours	**.none**	. **Second month exam**	**none**	**none**
Tenth	3 hours	**Students will be able to distinguish between pathogens under a microscope.**	. palm disease	**Practical lectur •Presentation •Group discussion • Display fungi**	**Discussion, oral questions, and bringing models**
Eleventh	**3 hours**	**Students will be able to distinguish between pathogens under a microscope..**	**Olive disease**	**Practical lectur • Presentation • Group discussion • models and**	**Discussion, questions and a short quiz**
Twelfth	3 hours	**Students will be able to distinguish between pathogens under a microscope.**	**Miscellaneous disease**	**Practical lectur • Presentation • Group discussion • models and images**	**Oral discussion, questions, and bringing samples**
Thirteenth	3 hours	**. Students will be able to distinguish between pathogens under a microscope.**	Post –harvest disease	**Practical lectur • Presentation • Group discussion models and images**	**Oral discussion, questions, and samples**
11. Course Evaluation					

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for reports and forms 7.5 points for the first monthly exam 7.5 points for the second monthly exam 20 points for the final exam 40 points total 60 points for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	.
Main References (Sources)	

Theoretical Course Description

1. Course Name:	
Plant Viruses / Theoretical	
2. Course Code:	
PLVR418	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Muhannad AL-Waeli	muhannad.khalf@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Introduce students to what viruses are. • *How to identify and differentiate the symptoms of viral diseases and the methods of virus diagnosis*
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Explain the historical development of virology and the discovery of the first viruses. Identify the key milestones in the evolution of virological science.	History and Taxonomy	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Define viruses and describe their distinguishing features from other living organisms.	General characteristics of viruses - Definition of viruses	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	List the general characteristics of viruses in terms of structure, replication, and parasitic lifestyle.	Virus structure	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	Describe the chemical composition of viruses including nucleic acids, proteins, and lipids when present.	Architecture of rigid virus	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fifth	2 hours	Explain the physical structure of viruses including shape, size, and symmetry.	Architecture of isometric viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Sixth	2 hours	Explain the rules for naming and classifying plant viruses according to the international virus taxonomy system.	species and taxonomy of plant viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Seventh	2 hours	Identify the various symptoms caused by viruses in plants. Differentiate types of viral symptoms based on their appearance and distribution.	Symptoms and host range	None	None
Eighth	2 hours	List the different modes of virus transmission between plants, including insects, tools, and seeds.	Transmission of Plant Viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Ninth	2 hours	List the different modes of virus transmission between plants, including insects, tools, and seeds.	Transmission of Plant Viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	Explain how plant viral genomes are organized and the types of viral genomes.	Genome organization	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eleventh	2 hours	Describe the mechanisms of virus entry into plant cells, replication, and cell-to-cell movement.	Replication of Viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	Describe traditional and modern methods of plant virus diagnosis, including ELISA and PCR.	Diagnosis of Plant Viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Describe traditional and modern methods of plant virus diagnosis, including ELISA and PCR.	Diagnosis of Plant Viruses	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	List strategies for controlling plant viral diseases, such as genetic resistance and integrated management.		None	Discussion and oral questions
Fifteenth	2 hours	Differentiate between viroids and phytoplasmas in terms of structure, replication, and impact on plants.	Viroid and Phytoplasma	• Group discussion • Answering students' questions	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	Ivar L.O. 2013. Aquaculture Engineering. John Wiley & Sons, Ltd.
Recommended Books and References (Scientific Journals, Reports...)	Misra R. and Dora K.C. 2015. A text Book on Aquaculture Engineering,

Electronic References, Websites	https://www.fao.org/fishery/ar

Practical Course Description

1. Course Name:	
Plant Viruses / Practical	
2. Course Code:	
PLVR418	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Muhannad AL-Waeli	muhannad.khalf@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Introduce students to what viruses are. • *How to identify and differentiate the symptoms of viral diseases and the methods of virus diagnosis*
9. Teaching and Learning Strategies	

Strategy	• Practical lectures in the laboratory and field visits.. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Identify essential equipment and materials required to set up a plant virology laboratory.	Equipment and Materials Required in a Virology Laboratory	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Second	3 hours	Explain the steps involved in confirming the presence of an unknown plant disease of possible viral origin.	Confirmation of an Unknown Plant Disease	• Practical lecture • Presentation • Group discussion	Discussion and oral questions production
Third	3 hours	List the systematic steps required to diagnose an unknown virus using available diagnostic tools.	Steps to Diagnose an Unknown Virus	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Fourth	3 hours	Describe methods for maintaining and preserving plant viruses for future research.	Maintenance of Viruses	• Explanation by the subject teacher • Explanation by the farm management	Discussion between students and between them and the subject teacher or farm management
Fifth	3 hours	Perform mechanical inoculation procedures and explain the mechanism of virus entry into the plant.	Mechanical Inoculation	• Practical lecture • Viewing samples of materials and equipment • Performing calculations using mathematical methods	Solving practical problems

Sixth	3 hours	Describe the procedure for isolating Tobacco Mosaic Virus (TMV) from tobacco products such as cigarettes.	Isolation of Tobacco Mosaic Virus (TMV) from Cigarettes	• Explanation by the subject teacher • Explanation by the farm management in the event of a field visit	Discussion and oral questions
Seventh	3 hours	Determine the temperature at which a plant virus becomes inactive or is destroyed.	Thermal Inactivation Point of the Virus	None	None
Eighth	3 hours	Assess the student's understanding of fundamental concepts covered in the early part of the course.	**First Exam**	• Practical lecture • Presentation • Video	Discussion and oral questions
Ninth	3 hours	Explain the concept of dilution end point and its importance in evaluating virus concentration in plant extracts.	Dilution Point	• Practical lecture • Presentation • Video	Discussion and oral questions
Tenth	3 hours	Describe the ability of a virus to remain active in raw plant sap over time.	Longevity in Crude Sap	• Practical lecture • Presentation • Video	Discussion and oral questions
Eleventh	3 hours	Explain the physical and chemical factors that can inhibit plant virus activity.	Inactivation of Viruses	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	3 hours	Identify symptoms caused by viral infection and explain the host range of plant viruses.	Symptoms and Host Range	• Practical lecture • Presentation • Video	Discussion and oral questions
Thirteenth	3 hours	Apply microscopic techniques to detect starch granules as indicators of viral infection in plant tissues.	Detection of Starch Granules in Virus-Infected Plant Tissue	• Practical lecture • Presentation • Video	Discussion and oral questions
Fourteenth	3 hours	Perform virus transmission via grafting and explain the mechanism of virus movement through the graft.	Transmission of Plant Viruses by Grafting	None	None
Fifteenth	3 hours	None	General review	• Group discussion • Answering students' inquiries	None
11. Course Evaluation					

Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 5 marks for the first monthly exam 5 marks for the second monthly exam 20 marks for the final exam 40 marks total 60 marks for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	فايروسات النبات اساسيات التجارب العملية
Main References (Sources)	
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Theoretical Course Description

1. Course Name:	
FIELD CROP INSECT / Theoretical	
2. Course Code:	
CRIN412	
3. Semester / Year:	
Frist Semester / 2024-2025	
4. Description Preparation Date:	
17/04/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Jinan Malik Kalaf	jinan.kalaf @uobasrah.edu.iq
8. Course Objectives	
Course Objectives	Know the general characteristics of insects and their development •Study of the most important insects that affect field crops and study their damage and control Know the general preventive and therapeutic methods of getting rid of harmful insects •Know the general characteristics of insects and their development •Identify the life cycle of insects Live view of insect models and photos
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students will be able to identify the composition of insect bodies and distinguish between their harms and benefits in general**	**General introduction to insects and their classification, pests and types, harms and benefits of insects**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	. Students will be able to distinguish between the different roles of these insects and identify the role responsible for the damage	**General insects: termites, locusts, mole criket**	• Theoretical lecture • Presentation • discussion	Report on the damage of these insects to field crop plants and other plants
Third	2 hours	**Students should be able to distinguish between different types of insects and their harmful roles on wheat and barley crops**	**Insects of the Poaceae family (wheat and barley)**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	**Students will be able to identify economically important pests of the Poaceae family in Iraq.**	**Corn insects**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Students should be able to distinguish between different insect species and their harmful roles on different legume crops**	**Insects of the legume family**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	**Students should be able to distinguish between different insect species and their harmful roles on sugar beet crop**	**Sugar beet bugs**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	First Monthly Exam	None	None
Eighth	2 hours	. Students should be able to distinguish between different insect species and their harmful roles on sesame, yarrow and tobacco crops	**Sesame, yellow and tobacco insects**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Ninth	2 hours	**Students should be able to distinguish between different insect species and their harmful roles on different cotton crops**	**Cotton insect**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	. Students should be able to distinguish between different types of insects and their harmful roles on sunflower	**Sunflower Insects**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	**Students should be able to distinguish between the different types of insects and their harmful roles on different warehouse**	**Warehouse Insects Part One**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	. Students should be able to distinguish between the different types of insects and their harmful roles on different warehouse	**Warehouse Insects Part two**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	**Students should be able to distinguish between the reasons for the spread of insects on Earth and the increase in their numbers**	**Causes of widespread insect spread and means of adaptation**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None
Fifteenth	2 hours	**Distinction between general control and prevention means of warehouse insect infestation**	**General Insect Control Methods**	**• Theoretical lecture • Presentation •Group**	**Discussion and oral questions**

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
10 marks for the first monthly exam
10 marks for the second monthly exam
30 marks for the final exam
Total 60 marks
40 marks for the practical part

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Field Crop Insects Book. Written by Dr. Salem Jamil Gerges and Dr. Hamza
Main References (Sources)	Crop Insects Book by Dr. Ayad Al-Hajj Yousef Banan Rakan Dabdoub 2010
Online references, websites	https://www.alarabimag.com/books/6810

Practical Course Description

1. Course Name:
Field crop insects / Practical
2. Course Code:
CRIN412
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Raja Malik Khlaf Email: raja.khlaf@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• Knowing the general characteristics of insects and their developmental scale • Studying the most important insects that infect field crops and studying their damage and control • Knowing the general preventive and therapeutic methods for getting rid of harmful insects • Knowing the general characteristics of insects and their developmental scale • Studying the most important insects that infect field crops and studying • Identifying the insect life cycle • Live observation of insect models and pictures • Practical work in the classroom laboratories. • Introductory and presentation of solidified insect models and pictures of insects and field visit

9. Teaching and Learning Strategies

Strategy	• . Practical lectures in classroom laboratories. • Presentations, display of insect sclerotized models and photos of insects, and field visits • Group discussions. • Problem-based learning, inquiry, and brainstorming. • Report- and project-based learning • Report- and project-based learning. • Problem-based learning, inquiry, and brainstorming. • Report- and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	. **Students will be able to identify the basic aspects of field crop insects**	A general introduction to insects and their classification, pests and their types, harms and benefits of insects.	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions**
Second	3 hours	. **Students will be able to distinguish between beneficial and harmful insects and the economic importance of insects to field crops.**	. **General insects: termites, locusts, mole criket**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**

Third	3 hours	. **Students will be able to distinguish between important and less important pests that affect crops.**	**Insects of the Poaceae family (wheat and barley)**	•Practical lecture •Presentation •Group discussion • Display of insect models and images	**Discussion, oral questions, and a short exam**
Fourth	3 hours	. **Students will be able to identify economically important pests of the Poaceae family in Iraq.**	**Corn insects**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Fifth	3 hours	**.none**	. **First month exam**	**none**	**none**
Sixth	3 hours	. **Students will be able to identify the most important pests that affect corn and the extent of their danger to this economic crop.**	. **Insects of the legume family**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Seventh	3 hours	**Students will be able to identify the most important pests that affect the legume family and the extent of their danger to these economic crops.**	**sugar beet insects**	**Practical lecture •Presentation •Group discussion •Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Eighth	3 hours	. **Students will be able to identify the most important pests that affect sugar beets and the extent of their danger to this economic crop.**	**Sesame, safflower and tobacco insects**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion and questions**
Ninth	3 hours	**.none**	. **Second month exam**	**none**	**none**
Tenth	3 hours	**Students will be able to identify the most important pests that affect sesame, safflower, and tobacco and the extent of their danger to these field crops**	. **Cotton insects**	**Practical lectur •Presentation •Group discussion • Display of insect models and images**	**Discussion, oral questions, and bringing insect models**
Eleventh	**3 hours**	. **Students will be able to identify the most important pests that affect cotton and the extent of their danger to this economic crop.**	. **sunflower insects**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Discussion, questions and a short quiz**
Twelfth	3 hours	**Students will be able to identify the most important pests that affect sunflowers and the extent of their danger to this economic crop.**	**Warehous Insects Part One**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion, questions, and bringing insect samples**
Thirteenth	3 hours	. **Students will be able to identify the most important pests that affect stored crops and the extent of their danger to them**	Warehouse Insects Part two	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion, questions, and bringing insect samples**

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for reports and forms 7.5 points for the first monthly exam 7.5 points for the second monthly exam 20 points for the final exam 40 points total 60 points for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Field Crop Insects Book. Written by Dr. Salem Jamil Gerges and Dr. Hamza
Main References (Sources)	Crop Insects Book by Dr. Ayad Al-Hajj Yousef Banan Rakan Dabdoub 2010

Theoretical Course Description

1. Course Name:	
Mites / Theoretical	
2. Course Code:	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
17/04/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Hayat Mohammed Ridha Mahdi hayat.reda@uobasrah.edu.iq	Email:
8. Course Objectives	
Course Objectives	Know the general characteristics of the dream and its development Study of the most important types of plant dream that affect plant families and study their harm and control Know the various methods of control of this pest
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**Students will be able to identify the composition of dream objects and distinguish between them and insects**	**An Introduction to the mites**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	. Students are able to know the mites pest and its importance on economic plants and stock materials and its harm to beneficial insects, humans and livestock	**The economic significance of themites**	• Theoretical lecture • Presentation • discussion	Report on the damage of these insects to field crop plants and other plants
Third	2 hours	Students' knowledge of the division of the mites body and the most important organs of sense and movement in it and the different organs of the body	**Mites body regions, sense organs and various body organs**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	Know the most important ranks and families of the mites	**Mites Classification**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Know the different environments for the growth, spread and reproduction of the mites**	**Mites Habits and Living Places**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	**Know the most important features of members of this family and the resulting damage**	**Tetranychidae**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	First Monthly Exam	None	None

Eighth	2 hours	**Know the most important features of members of this family and the resulting damage**	**Tenuipalpid**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**Know the most important features of members of this family and the resulting damage**	**Eriophyidae**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	. Know the most important features of members of this family and the resulting damage	**Tarsonemidae**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 hours	**Know the most important features of members of this family and the resulting damage**	**Acaridae**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	. Know the most important groups of chemical pesticides and the mechanism of their effects on the mites	**Acaricides**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	**Know the different ways to combat mites**	**Biocontrol, genetic control and chemical sterilants for the mites**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	2 hours	None	Second Monthly Exam	None	None
Fifteenth	2 hours	**Knowing the overlap of antibiotics and addressing the problem of rapid resistance to chemical pesticides**	**IPM Mites**	**• Theoretical lecture • Presentation •Group**	**Discussion and oral questions**

11. Course Evaluation

Distribution of 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. 5 marks for attendance, participation and answering oral questions 5 marks for reports and projects 10 marks for the first monthly exam 10 marks for the second monthly exam 30 marks for the final exam Total 60 marks 40 marks for the practical part	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	1 .Abu El Hob, Jalil Karim. 1986 . Translation of the book The Harmful Dream of Economic Plants, Part II The Quadruped Dream (Aryufi) . by Gibson, Kiefer and Baker. Ministry of Higher Education and Scientific Research – University of Baghdad – Faculty of Agriculture. 675 pages. 2. Navigator, Nizar Mustafa. 2009. Basic macaroses, economics, and countermeasures. Mosul University, Ministry of Higher Education and Scientific Research, Iraq. 780 pages.
Main References (Sources)	.1 Krantz, G.W. 1970. A manual of Acarology. O.S.U. Book Stores, Corvallis, Oregon. 335pp. .2 Kaur, N. 2014. Biology of Tetranychus urticae Koch and Seasonal Incidence of Mites infesting Citrus. the Punjab Agricultural University in partial fulfillment of the requirements. Master of Science in Entomology. 1-43pp. .3 "Krantz, G. W., and Walter, D. E. (Eds.) 2009. A Manual of Acarology." Florida Entomologist, vol. 92, no. 3, Sept. 2009, p. 526.
Recommended books and references (scientific journals, reports...)	1. Vacante, V. 2010. Review of the phytophagous mites collected in the world. Acarologia, 50: 221- 241. 2. An Introduction to Acarology. 1952 by Baker and Wharton

Online references, websites	NAPPO: North American Plant Protection Organization. 2014. DP 03: Morphological Identification of Spider Mites (Tetranychidae) Affecting Imported Fruits. Prepared by the members of the NAPPO Expert Group (previous Technical Advisory Group) on Fruit Tetranychus Mites. Mexico- USA-Canada. 34pp .2 UNCTAD. 2005. Info.Comm.Market information in the commodity area. Ranganna , S.1977. Manual of Analysis of Fruit and Vegetable Products.Tata Mc Graw– Hill Publishing Company Limited New Delhi,India.pp.634.

Practical Course Description

1. Course Name:
Mites / Practical
2. Course Code:
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: dawood salman hamid Email: dawood.hamid@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• Knowing the general characteristics of spiders • RaisingMites in the laboratory to learn about the life cycle of spiders and the damage they cause to plants, and making temporary and permanent slides to help students identify Mites • Knowing the various methods of controlling this pest through laboratory and field experiments

9. Teaching and Learning Strategies

Strategy	• . Practical lectures in classroom laboratories. • Presentations, display of insect sclerotized models and photos of insects, and field visits • Group discussions. • Problem-based learning, inquiry, and brainstorming. • Report- and project-based learning • Report- and project-based learning. • Problem-based learning, inquiry, and brainstorming. • Report- and project-based learning.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	**Distinguishing between Araneda , Mites** and **Pseudo scarpoin**	**Students will be able to identify and differentiate the body structures ofAranda, Mites, and scarpoin**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions**
Second	3 hours	. Methods of collecting samples and calculating the population density of the mites	**Students learn how to collect dream from the field and calculate population density**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**

Third	3 hours	. Methods of raising mites in the laboratory and field for the purpose of conducting experiments and research	**Introducing students tomites culture in the laboratory**	•Practical lecture •Presentation •Group discussion • Display of insect models and images	**Discussion, oral questions, and a short exam**
Fourth	3 hours	**Save and load spider**	**Students learn how to save a Mites and make slides.**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Fifth	3 hours	**.none**	. **First month exam**	**None**	**none**
Sixth	3 hours	**General damage caused by mites to plants**	**Students will be able to identify the pest of the dream and its importance to economic plants and stored materials.**	**•Practical lecture •Presentation •Group discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Seventh	3 hours	**. Laboratory testing of the effectiveness of some mites pesticides**	**Students learn to control spiders in the lab**	**Practical lecture •Presentation •Group discussion •Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Eighth	3 hours	**tudying predator types and their efficiency in preying on mites**	**Students should know the most important predators that prey on spiders**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion and questions**
Ninth	3 hours	**.none**	. **Second month exam**	**none**	**none**
Tenth	3 hours	**Mites Classification**	. Know the most important ranks and families of the mites	**Practical lectur •Presentation •Group discussion • Display of insect models and images**	**Discussion, oral questions, and bringing insect models**
Eleventh	**3 hours**	. Tetranychidae	. Knowing the most important characteristics of the members of this family	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Discussion, questions and a short quiz**
Twelfth	3 hours	**Eriophyidae**	**Knowing the most important characteristics of the members of this family**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion, questions, and bringing insect samples**
Thirteenth	3 hours	**Acaridae**	Knowing the most important characteristics of the members of this family	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion, questions, and bringing insect samples**

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc. 5 points for reports and forms 7.5 points for the first monthly exam 7.5 points for the second monthly exam 20 points for the final exam 40 points total 60 points for the theoretical part

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Abu El Hob, Jalil Karim. 1986 . Translation of the book The Harmful Dream of Economic Plants, Part II The Quadruped Dream (Aryufi) . by Gibson, Kiefer and Baker. Ministry of Higher Education and Scientific Research – University of Baghdad – Faculty of Agriculture. 675 pages. 2. Navigator, Nizar Mustafa. 2009. Basic macaroses, economics, and countermeasures. Mosul University, Ministry of Higher Education and Scientific Research, Iraq. 780 pages.
Main References (Sources)	Kaur, N. 2014. Biology of Tetranychus urticae Koch and Seasonal Incidence of Mites infesting Citrus. the Punjab Agricultural University in partial fulfillment of the requirements. Master of Science in Entomology. 1-43pp. 3. "Krantz, G. W., and Walter, D. E. (Eds.) 2009. A Manual of Acarology." Florida Entomologist, vol. 92, no. 3, Sept. 2009, p. 526

Theoretical Course Description

1. Course Name:	
Horticultural insects	
2. Course Code:	
3. Semester / Year:	
Second semester / 2024-2025	
4. Description Preparation Date:	
2025/01/02	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Ali Zachi Abduiqader	Email: ali.zachi@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• **Identify the most important types of insects that infest orchards.** • **Identify the life cycle of the most important of these insects.** • **Identify the most significant damage caused by these insects.** • **Identify the most important biological and chemical methods for controlling these insects.**
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry, and brainstorming. • Report-based learning and projects..

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**. Identify the most important factors that helped insects spread.**	**Introduction to entomology and the factors that helped insects spread**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Second	2 hours	**Identify the most important insect damage to economic crops.**	**Pests, their types and their damages**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Third	2 hours	**Learn about the spread and life cycle of termites, locusts, and mole Cricket.**	**Insects with multiple hosts**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Fourth	2 hours	**Learn about the most important insects that affect date palms and the losses they cause.**	**date palm insects**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Fifth	2 hours	**Identifying insects that infect apple trees**	**The Apple insects**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Sixth	2 hours	**Learn about the most important insects that infect citrus and pomegranate trees.**	**The Citrus and pomegranate insects**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Seventh	2 hours		**First exam**		
Eighth	2 hours	**Learn about the most important insects that infect fig and grape trees.**	**The fig and grape insects**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Ninth	2 hours	**Learn about the most important insects that affect the Solanaceae plants**	**Insects of Solanaceae plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Tenth	2 hours	**Identify the most important insects that infect the Cucurbitaceae family.**	**Insects of Cucurbitaceae plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**

Eleventh	2 hours	**Identify the most important insects that infect the Malvaceae family**	**Insects of Malvaceae plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Twelfth	2 hours	**Identify the most important insects that infect the Liliaceae family**	**Insects of Liliaceae plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Thirteenth	2 hours	**Identify the most important insects that infect the Leguminous family**	**Insects of Leguminous plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Fourteenth	2 hours	**Identify the most important insects that infect the Cruciferae family**	**Insects of Cruciferae plants**	**Practical lecture Presentation Group discussion**	**Oral discussion and questions**
Fifteenth	2 hours		**Second exam**		

11. Course Evaluation

The grade is distributed out of 100 based on the student's assigned tasks, such as daily preparation, daily, oral, and monthly exams, written exams, reports, etc.
5 points for attendance, participation, and answering oral questions
5 points for reports and projects
10 points for the first monthly exam
10 points for the second monthly exam
30 points for the final exam
Total: 60 points
40 points for the practical part

12. Learning and Teaching Sources

Required textbooks (methodology if available)	Horticultural insects by Dr. Salem Jamil Girgis
Main References (Sources)	Horticultural insects Theoretical Part Written by Prof. Dr. Ayad Yousef Al-Hajj Ismail
Recommended supporting books and references (scientific journals, reports...)	
Electronic References, Websites	https://uomosul.edu.iq/agriculture/wp-content/uploads/sites/11/2023/09

Practical Course Description

1. Course Name:	
Horticultural insects	
2. Course Code:	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Amjed Abbas Fadhel	Email: amjed.fadhil@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	1 .Gain experience in identifying the most important insects that infect orchards. 2. Identify the most important signs of infestation and the most significant damage caused by insects to fruit trees and horticultural crops..
9. Teaching and Learning Strategies	
Strategy	**•Practical lectures in the laboratory and field visits.** **•Presentations** **•Group discussions** **•Problem-based learning, inquiry, and brainstorming** **• Learning based on report writing and fieldwork**

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	The student will be able to identify the stages of insects and the most important signs of infestation by these insects.	**General pests (polyphagous)**	**Practical lecture •Presentation Group discussion**	**Display insect models**
Second	3 hours	**The student will be able to identify the symptoms, signs, and appearance of insects that infect date palms.**	**The date palm insects**	**Practical lecture •Presentation • Group discussion**	**Display insect models**
Third	3 hours	**. The student will be able to identify the symptoms, signs, and appearance of insects that infect date palms**	Date palm insects complement	**Practical lecture •Presentation • Group discussion**	**Display insect models**
Fourth	3 hours	**Learn about the most important insects that infect apple trees**	**The Apple Insects**	**Practical lecture •Presentation • Group discussion**	**Display insect models**
Fifth	3 hours	**Learn about the most important insects that infect citrus and pomegranate trees.**	**The Citrus and Pomegranate Insects**	**Practical lecture •Presentation • Group discussion**	**Display insect models**
Sixth	3 hours	**Learn about the most important insects that infect fig and Grape vine trees.**	**The Fig and Grape vine Insects**	**Practical lecture •Presentation • Group discussion**	**Display insect models**

Seventh	3 hours	**nothing**	**First exam**	**nothing**	**nothing**
Eighth	3 hours	**Learn about the most important insects that affect the Solanaceae family.**	**Insects of Solanaceae plants**	**•Practical lecture •Presentation •Discussions with students •Video presentations**	**Discussing oral questions, presenting insect specimens, and going to the field to observe insect infestations.**
Ninth	3 hours	**Learn about the most important insects that affect the Cucurbitaceae family.**	**Insects of Cucurbitaceae plants**	**Practical lecture •Presentation •Discussions with students •Video presentations**	**Oral discussion and questions Insect model presentation**
Tenth	3 hours	**Learn about the most important insects that affect the Malvaceae family.**	**Insects of Malvaceae plants**	**Practical lecture Presentation Video presentations**	**Oral discussion and questions Insect model presentation**
Eleventh	3 hours	**Learn about the most important insects that affect the Liliaceae family**	**Insects of Liliaceae Plants**	**Practical lecture Presentation Video presentations**	**Oral discussion and questions Insect model presentation**

Twelfth	3 hours	**Learn about the most important insects that affect the Leguminous family**	**Insects of Leguminous Plants**	**Practical lecture Presentation Video presentations**	**Oral discussion and questions Insect model presentation**
Thirteenth	3 hours	**Learn about the most important insects that affect the Cruciferae family**	**Insects of Cruciferae Plants**	**Practical lecture Presentation Video presentations**	**Discussion and questions Display insect models Go to the field to observe some insect infestations**
Fourteenth	3 hours	**nothing**	**The second exam**	**nothing**	**nothing**
Fifteenth	3 hours	**Learn about the most important insects that affect the ornamental Plants**	**Insects of ornamental Plants**	**Practical lecture Presentation Video presentations**	**Oral discussion and questions Insect model presentation**

11. Course Evaluation

First practical exam: 5 marks
Second practical exam: 5 marks
Attendance: 5 marks
Activities and report writing: 5 marks
Final exam: 20 marks

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Practical Horticultural insects, written by Dr. Ayad Yousef Al-Hajj Ismail and Banan
Main References (Sources)	Horticultural insects, authored by Dr. Salem Jamil Girgis and Dr. Muhammad
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	https://uomosul.edu.iq/agriculture/wp-content/uploads/sites/11/2023/09

Theoretical Course Description

1. Course Name:	
Insect Ecology / Theoretical	
2. Course Code:	
PEMA425	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
17/05/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Aqeel Alyousuf Email: aqeel.abd@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Define IPM (Integrated pest management) • Describe why IPM is important. • Describe what the economic thresholds indicates. • Identify the steps involved in the developing an IPM plan
9. Teaching and Learning Strategies	

Strategy	• Theoretical lectures in classrooms. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Students will be able to explain the concept of integrated pest	Historical Overview of IPM	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to describe the distinctive characteristics of	Pests and Economic Injury levels	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 hours	Students will be able to list the steps involved in implementing an IPM system.	IPM Principles and Concepts	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	Students will be able to explain the importance of pest monitoring and	The elements of an IPM program	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fifth	2 hours	None	Developing a Sampling Program	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Sixth	2 hours	Students will be able to explain natural pest resistance	Sampling and monitoring	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Seventh	2 hours	Students will be able to describe various agricultural	The First Month Exam	None	None
Eighth	2 hours	Students will be able to explain the concept and importance of	Natural control	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Ninth	2 hours	Students will be able to describe the principles and methods of using	Cultural control in IPM	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	Students will be able to identify environmental and health issues	Biological control	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eleventh	2 hours	Students will be able to explain the role of pheromones in	Chemical control	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	None	Problems of pesticide applications	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	2 hours	Students will be able to explain the components and practical	Pheromones and IPM	• Theoretical lecture • Presentation • Group discussion Video	report
Fourteenth	2 hours	None	The Second Month Exam	None	None
Fifteenth	2 hours	Students will be able to develop IPM	IPM of Date palm's pests	• Group discussion • Answering students' questions	Discussion and oral questions

11. Course Evaluation

Distribution of 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.
5 marks for attendance, participation and answering oral questions
5 marks for reports and projects
20marks for the first monthly exam
20marks for the second monthly exam
50marks for the final exam
Total 100 marks

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None
Main References (Sources)	الادارة المتكاملة للافات/ د عبدالستار عارف علي / 2017، دار البيروني للنشر والتوزيع
Recommended Books and References (Scientific Journals, Reports...)	2- Walter, G. H. (2005). Insect pest management and ecological research.
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