

**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

2026

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

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

Academic Program Description Form

University Name **University Of Basrah**

Faculty / Institute **College Of Agriculture**

Scientific Department **Department of Field Crops**

Academic or Professional Program Name **Field Crops**

Final Certificate Name **Bachelors in Field Crops**

Academic System **Semester System**

Description Preparation Date 10 June 2026

File Completion Date 21 June 2026



Head of Department Name

Asst. Dr. Khawla Rashige Hassan

Date 21 June 2026



Scientific Associate Name

Prof Dr. Sadiq Jabar Muhsin

21 June 2026

Signature



This File Is Checked By Prof Dr. Aqeel Abbod Suhaim

Department of Quality Assurance and University Performance

Director of The Department Of Quality Assurance and University Performance

Date 21 June 2026



Prof Dr Sarmad Ghazi Mohammed

Approval of The Dean

1. Program Vision

The Field Crops Department seeks to advance and excel, prepares the process of scientific and technical progress, and provides scientific and practical consultations for investment projects.

2. Program Mission

. Preparing qualified professors and agricultural engineers in the field of field crops who are up to date with the needs of the labor market and implementing the system of environmental preservation and community service by encouraging professors to .follow modern agricultural methods

3. Program Objectives

Improving the scientific level of the department, students and faculty
Providing a better teaching climate for students and teachers
Providing appropriate opportunities to meet the department's need for scientific competencies
Improvement and expansion in response to the labor market and community service

4. Program Accreditation

Does the program have program accreditation? And from which agency Yes / National Council for the Accreditation of Agriculture College Programs?

5. Other External Influences Ministry of Higher Education and Scientific Research

Is there a sponsor for the program? Opportunities for support are available

6. Program Structure

Program Structure	Number of Courses	Credit Hours	Percentage	Reviews*
Institution Requirements	8	16	50	
College Requirements	10	30	31.5	
Department Requirements	33	115.5	28	

Summer Training	-	-	100	
Others				

*

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

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
Third Stage First Semester	DAEX327	Design and Analysis of Experiments	2	2
	GRCR315	Cereal crops	3	2
	CRIN312	Crop insects	2	2
	LARE316	land reclamation	2	2
	FOCR314	forage crops	3	2
Third Stage Second Semester	FBCR317	fiber crops	3	2
	CRDS319	field crop diseases	2	2
	CRME320	Mechanization of FieldCrops	3	2
	SETE318	seed technology	3	2
	LECR313	legume crops	3	2
Forth Stage First semester	DRPL412	Drugs Plants	2	2
	PLPH420	plant physiology	3	2
	WEBI413	Weed biology	3	2
	CRMA415	field crops management	2	2
	MACU416	Marshland Cultivation	2	2

	MOGE425	molecular genetics	3	-
	GRPR421	Project Graduation 1	1	1
	ENGL406	English language / 4	-	1
Forth Stage Second semester	WECO418	Weeds and Control Methods	3	2
	DLCU419	Desert Land Cultivation	3	2
	ENST424	environmental stress	3	2
	PAMA417	pasture management	2	2
	SEMN423	Seminars	-	1
	PLBR414	plant breeding	2	2
	GRPR422	Project Graduation 2	2	1

8. Expected Learning Outcomes of Program	
Knowledge	
Learning Outcomes A- Cognitive objectives Knowing the theories related to different field .crops 2-Understanding methods of growing field crops .and methods of field management 3.Knowledge of scientific problem-solving skills 4 - Enabling the student to understand the conversation about field crop sciences and equipping various relevant departments with specialized scientific cadres	Building a detailed base on the department's staff and their activities and preparing plans for accepting primary and postgraduate studies Preparing scientific and technical staff to occupy administrative and scientific positions in the Iraqi agricultural sector Training students to acquire applied agricultural experiences in addition to applied theoretical foundations
Skills	

1.-Field crop technology and seed technology 2.-Technology of reclamation and soil preparation for agriculture 3-Fertilization technology, crop service, combating weeds and agricultural pests, harvesting, animal production, and food .processing 4- Irrigation and drainage engineering technology.	. Introducing students to the various agricultural operations in agriculture and how to conduct them Preparing agricultural cadres capable of caring for field crop plants, spreading their cultivation, and how to sustain the cultivated areas. Qualifying them to advance the crops that the department is interested in addressing in its study programs
Ethics	
1-Asking questions and answering them in the classroom 2-Defining the problem and its solution 3-Learn the correct ways of thinking 4- A case study in graduation research and how to solve it	Finding solutions to the problems and obstacles that students encounter in the theoretical and practical parts of the subject and finding solutions to them Enabling students to solve the largest number of exercises and applications on topics Asking students inferential questions

9. Teaching and Learning Strategies

-Lectures
- Seminars

Discussions

10. Evaluation Methods

Quarterly tests
Monthly tests-
Homework-

- Graduation research discussion tests

11. Faculty

Faculty Members

Academic Rank	Specialization	Special Requirements/Skills (If Applicable)		Number of Teaching Staff	
	General	Special		Staff	Lecturer
Prof	Soil and water sciences	plant nutrition		2	
Prof.	Horticulture and landscaping	plant nutrition		-	
Prof.	Field crops	Field Crop Physiology		1	
Assist.Prof.	Economic sciences	Economic development		1	
Assist.Prof.	Life science	plant physiology		2	
Assist.Prof.	Horticulture and landscaping	Production of vegetable crops		1	
Assist.Prof.	animal production	Animal feeding		1	

Assist.Prof.	Field crops	Plant Physiology			1	
Assist.Prof.	Field crops	plant breeding			1	
Assist.Prof.	Field crops	Ecology Physiology			2	
Assist.Prof	Soil and water sciences	Soil and water sciences			1	
lecturer	Field crops	Field crops			1	
Lecturer	Field crops	Field crops			5	
lecturer	Field crops	Field crops			1	
lecturer	Field crops	Field crops			-	
lecturer	Physics Science	Laser physics			-	
lecturer	Field crops	Field crops			-	
Ass. lecturer	Field crops	Field crops			-	
Ass. Lecturer	Field crops	Field crops			3	
Ass. Lecturer	Field crops	Field crops			-	

Professional Development
Monitoring New Faculty Members
Focus on developing personal capabilities through continuous and active participation in general and specialized courses and workshops Focus on self-development in the field of classroom management and student guidance through mutual interaction in lectures
Professional Development for Faculty Members

By following modern teaching methods, reviewing websites, and keeping pace with developments to learn about new research.

12. Acceptance Criterion

**Developing regulations related to admission to the college or institute, whether)
(central admission or others mentioned**

Central admission – for morning studies

Direct application for evening studies - according to grade and competition

13. The Most Important Sources of Information About The Program

From methodological books, help books, the Internet, and scientific research

14. Program Development Plan

Continuous training of special skills and their application in scientific and practical fields

Practice using learning and teaching methods in all specialized fields

Program Skills														
				Required Program Learning Outcomes										
Year/Level	Course Code	Course Name	Basic or Optional	Knowledge				Skills						
3	GENE335	General Genetics	Basic	√	√	√	√	√	√	√		√	√	√
3	DAEX327	Design and	Basic	√	√	√	√	√	√	√		√	√	√
3	CRME320	mechanization of Field	Basic	√	√	√	√	√	√	√		√	√	√
3	CRIN312	Crop insects	Basic	√	√	√	√	√	√	√		√	√	√
3	LARE316	land reclamation	Basic	√	√	√	√	√	√	√		√	√	√
3	FOCR314	Forge Crops	Basic	√	√	√	√	√	√	√		√	√	√
3	FBCR317	fiber crops	Basic	√	√	√	√	√	√	√		√	√	√
3	GRCR315	Cereal crops	Basic	√	√	√	√	√	√	√		√	√	√
3	CRDS319	field crop	Basic	√	√	√	√	√	√	√		√	√	√
3	SETE318	seed technology	Basic	√	√	√	√	√	√	√		√	√	√
4	DRPL412	Drugs Plants	Basic	√	√	√	√	√	√	√		√	√	√
4	PLPH420	plant physiology	Basic	√	√	√	√	√	√	√		√	√	√
4	WEBI413	Weed biology	Basic	√	√	√	√	√		√		√	√	√
4	CRMA415	field crops	Basic	√	√	√	√	√		√		√	√	√
	ENGL406	English language	Basic	√	√	√	√	√		√		√	√	√
4	MACU416	Marshland	Basic	√	√	√	√	√		√		√	√	√
4	MOGE425	molecular	Basic	√	√	√	√	√		√		√	√	√
4	GRPR421	project Graduate	Basic	√	√	√	√	√		√		√	√	√
4	PLBR414	plant breeding	Basic	√	√					√		√	√	√
4	DLCU419	Desert Land	Basic	√	√					√		√	√	√
4	WECO418	Weeds and	Basic	√	√		√	√		√		√	√	√

4	ENST424	environ mental stress	Basic	√	√		√	√		√		√	√	√
4	PAMA417	pasture manage ment	Basic	√			√	√		√		√	√	√
4	PAMA417	Seminar s	Basic	√			√	√		√		√	√	√
4	GRPR422	project Graduat ion 2	Basic	√	√		√	√		√		√	√	√

Course Description Form

1. Course Name:	
Land Reclamation	
2. Course Code:	
LARE316	
3. Semester / Year:	
First semester \ third stage 2025-2026	
4. Description Preparation Date:	
5-5-2026	
5. Available Attendance Forms:	
Attending full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours -3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Salwa Jumaah Fakhir	Email: salaw.fakher@uobasrah.edu.iq
8. Course Objectives	

Course Objectives			• Identify the most important problems that agricultural lands suffer from • The most important morphological soil characteristics • Learn about methods of reclaiming saline, desert and sandy lands		
9. Teaching and Learning Strategies					
Strategy		In-person lectures for 15 weeks, including monthly exams, daily exams, and a scientific trip to one of the reclamation projects in the region.			
10. Course Structure					
Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	To be able to understand and assimilate scientific information and the ability to discriminate	land reclamation(decision and requirements)	Lecture with explanation presentation	daily exam
2	2	To be able to understand and assimilate scientific information and the ability to discriminate	Lands that need reclamation	Lecture with explanation presentation	daily exam
3	2	To be able to understand and assimilate scientific information and the	Reclamation of Saline Soils	Lecture with explanation presentation	daily exam

		ability to discriminate		n	
4	2	To be able to understand and assimilate scientific information and the ability to discriminate	The problem of salinity and its impact on Agricultural production	Lecture with explanation presentation	daily exam
5	2		Exam1		
6	2	To be able to understand and assimilate scientific information and the ability to discriminate	Classification of salt-affected soils Reclamation of sodic soils	Lecture with explanation presentation	daily exam
7	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of calcareous soils	Lecture with explanation presentation	daily exam
8	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of gypsiferous soils	Lecture with explanation presentation	daily exam
9	2	To be able to understand and	Reclamation of sandy and desert	Lecture with	daily exam

		assimilate scientific information and the ability to discriminate	soils	explanation presentation	
10	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of water logged soils	Lecture with explanation presentation	daily exam
11	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of Acid soils	Lecture with explanation presentation	daily exam
12	2	To be able to understand and assimilate scientific information and the ability to discriminate	land reclamation(decision and requirements)	Lecture with explanation presentation	daily exam
14-13	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of Saline Soils Lands that need reclamation	Lecture with explanation presentation	daily exam
15	-	-	Exam2	-	-
11. Course Evaluation					

The final exam consists of 50 monthly exams, 10 for each monthly exam, 5 daily exams, and 5 reports	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	1-Ahmed Haider Al-Zubaidi. 1989. Land Reclamation. Ministry of Higher Education. Albasrah university. 2- Shafiq Ibrahim Abdel-Al and Amin Hamad Al-Rawi. 1981. Soil reclamation and improvement. Ministry of Higher Education and Scientific Research. Sulaymaniyah University
Main References (Sources)	Agri-fax-liming of acid soil ,Alberta Agriculture, Canada,Agdex534.1,June(1981).

1. Course Name:
Practical Land Reclamation
2. Course Code:
LARE316
3. Semester / Year:2026
First semester \ Thrid stage
4. Description Preparation Date:
5-5-2026
5. Available Attendance Forms:
Attending full time
6. Number of Credit Hours (Total) / Number of Units (Total)
2hours :3 units
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Wfaaa A. Ahmed			Email: wafa.ahmed@uobasrah.edu.iq		
8. Course Objectives					
Course Objectives			• Identify the most important problems that agricultural lands suffer from The most important morphological soil characteristics • Learn about methods of reclaiming saline, desert and sandy lands		
9. Teaching and Learning Strategies					
Strategy		In-person lectures for 15 weeks, including monthly exams, daily exams, and a scientific trip to one of the reclamation projects in the region.			
10. Course Structure					
Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	To be able to understand and assimilate scientific information and the ability to discriminate	Conducting a culture experiment in anvils of saline soil washed with different levels of salt water.	Lecture with explanation presentation	daily exam
2	2	To be able to understand and assimilate scientific information and the ability to discriminate	Conducting a culture experiment in anvils of saline soil washed with different levels of salt water.	Lecture with explanation presentation	daily exam
3	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of saline soils/implementation of the saline soil reclamation program	Lecture with explanation presentation	daily exam
4	2	To be able to understand and assimilate scientific	Implementing a saline soil reclamation program	Lecture with explanation	daily exam

		information and the ability to discriminate	Specifications of water pumps	presentation	
5	2		Exam1		
6	2	To be able to understand and assimilate scientific information and the ability to discriminate	Irrigation channels	Lecture with explanation presentation	daily exam
7	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclaimed land management	Lecture with explanation presentation	daily exam
8	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclaimed land management	Lecture with explanation presentation	daily exam
9	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of sandy lands	Lecture with explanation presentation	daily exam
10	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of sandy lands	Lecture with explanation presentation	daily exam

11	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of flooded lands	Lecture with explanation presentation	daily exam	
12	2	To be able to understand and assimilate scientific information and the ability to discriminate	Reclamation of flooded lands	Lecture with explanation presentation	daily exam	
-13 14	2	To be able to understand and assimilate scientific information and the ability to discriminate	Follow up practical experience Evaluate the practical experience and discuss the results	Lecture with explanation presentation	daily exam	
15	2		Exam2			
11. Course Evaluation						
The final exam consists of 20monthly exams, 10 for each monthly exam, 5 daily exams, and 5 reports						
12. Learning and Teaching Sources						
Required Textbooks (Curricular Books, If Any)			1-Ahmed Haider Al-Zubaidi. 1989. Land Reclamation. Ministry of Higher Education. Albasrah university. 2- Shafiq Ibrahim Abdel-Al and Amin Hamad Al-Rawi. 1981. Soil reclamation and improvement. Ministry of Higher Education and			

	Scientific Research. Sulaymaniyah University	
No	Agri-fax-liming of acid soil ,Alberta Agriculture, Canada,Agdex534.1,June(1981).	

Course Description Form

1. Course Name:
design and analysis of agriculture experiments – Third stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
DAEX327
3. Semester / Year:2025- 2026
First semester- third stage
4. Description Preparation Date:
12- 4-2026
5. Available Attendance Forms:
In presence- full time
6. Number of Credit Hours (Total) / Number of Units (Total):
3 units: 2 hours
7. Course Administrator's Name
م.د. خولة داود كاظم 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	2	Introduction to Statistics	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	a lecture with an explanation, a presentation,	Class room work and discussion
2	2	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 and discussion

3	2	Statistical procedures for agricultural research. 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,	Class room work and discussion
4	2	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	2	Tests suggested after experimentation	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	2	First-month exam	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	a lecture with an explanation, a presentation,	Class room work and discussion
7		Randomized complete block design	First-month exam		

8	2	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,	Class room work and discussion
9	2	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	a lecture with an explanation, a presentation,	Class room work and discussion
10	2	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 exam	a lecture with an explanation,	Class room work and discussion
11	2	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 exam	a lecture with an explanation,	Class room work and discussion

12	2	The relative efficiency of the Latin square design compared to the completely random design and the block 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
13	2	Review for 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	a lecture with an explanation, a presentation,	Class room work and discussion
14	2	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,	Class room work and discussion
15		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

Course Description Form

1. Course Name:
design and analysis of agriculture experiments (Practical) – Third stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
DAEX327
3. Semester / Year:2025- 2026
First semester- third stage
4. Description Preparation Date:
14- 4-2026
5. Available Attendance Forms:
In presence- full time
6. Number of Credit Hours (Total) / Number of Units (Total):
3 unites: 2 hours
7. Course Administrator's Name
Name: Zainab Ahmed Abdul- Razaq Email: zainab.ahmed@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	2	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	a lecture with an explanation, a presentation,	discussion
2	2	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	2	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	2	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	2	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	2	First-month exam			

7	2	Randomized complete block design (exercises)	To be able to understand and comprehend the theoretical	a lecture with an explanation, a	discussion and quiz
8	2	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	2	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	2	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 exam	a lecture with an explanation,	discussion
11	2	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	a lecture with an explanation,	Class room work

12	2	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	2	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	a lecture with an explanation, a presentation,	discussion and quiz
14	2	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	2	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:
FIELD CROP INSECT / Theoretical
2. Course Code:
CRIN312
3. Semester / Year:
Frist Semester / 2025-2026
4. Description Preparation Date:
17/04/2026
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: Hayat Mohammed Ridha Mahdi Email: hayat.reda@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	General insects: termites, locusts, mole cricket	• 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	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	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	Sugar beet bugs	• Theoretical lecture • Presentation • Group	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	Warehouse Insects Part One	• Theoretical lecture • Presentation • Group	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 compared to the rest of living	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	General Insect Control Methods	• 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)	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:
CRIN312
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
18/04/2026
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 3units
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	2 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	2 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 cricket	Practical • lecture • Presentation Group • discussion • Display of insect models and images	Oral discussion and questions and requesting insect samples
Third	2 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	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	Practical • lecture • Presentation Group • discussion • Display of	Oral discussion and questions and requesting insect
Fifth	2 hours	.none	. First month exam	None	none
Sixth	2 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	Oral discussion and questions and requesting insect samples

Seventh	2 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 •	Oral discussion and questions and requesting insect samples
Eighth	2 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	2 hours	.none	. Second month exam	none	none
Tenth	2 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	2 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	Discussion , questions and a short quiz
Twelfth	2 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	Oral discussion, questions, and bringing insect samples

Thirteenth	2 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	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 Yusef Banan Rakan Dabdoub 2010		

Course Description Form

1. Course Name:
<i>practical fodder crops – third stage - / College of Agriculture - University of Basrah</i>
2. Course Code:
FOCR314
3. Semester / Year:
Second semester 2025-2026
4. Description Preparation Date:
2-5-2026
5. Available Attendance Forms: In presence
My presence

6. Number of Credit Hours (Total) / Number of Units (Total):					
4 units :3 hours					
7. Course Administrator's Name					
Name: Fatimah Ali Jamel			Email: Fatima.chamel @uobasrah.edu.iq		
8. Course Objectives					
Course Objectives			1-knowing the most importantfodder crops 2- development of methods of cultivation and provision of fodder 3- identify the types of pastures		
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	Unit or Subject Name	Learning Method	Evaluation Method
1	3	The ability to understand and comprehend the material	Classification forage crops	a lecture explain with view models	Daily and monthly tests
2	3	The ability to understand and comprehend the material	Botanical description of forage legumes	a lecture explain with view models	Daily and monthly tests
3	3	The ability to understand and comprehend the material	Botanical description of forage grass	a lecture explain with view models	Daily and monthly tests

4	3	The ability to understand and comprehend the material	Botanical description of forage crops of other families	a lecture explain with view models	Daily and monthly tests
5	3	The ability to understand and comprehend the material	Distinguishing the seeds of forage crops	a lecture explain with view models	Daily and monthly tests
6	3	The ability to understand and comprehend the material	Hay& silage	a lecture explain with view models	Daily and monthly tests
7		Exam	Exam	-----	-----
8	3	The ability to understand and comprehend the material	forage crop mowing	a lecture explain with view models	Daily and monthly tests
9	3	The ability to understand and comprehend the material	Bloating and its causes	a lecture explain with view models	Daily and monthly tests
10	3	The ability to understand and comprehend the material	Methods of using natural plants	a lecture explain with view models	Daily and monthly tests
11	3	The ability to understand and comprehend the material	A field visit to the research station to see the forage crops	a lecture explain with view models	Daily and monthly tests
12	3	The ability to understand and comprehend the material	Weeds	a lecture explain with view models	Daily and monthly tests
13	3	The ability to understand and comprehend the material	Making reports on forage crops	a lecture explain with view models	Daily and monthly tests
14	3	The ability to understand and comprehend the material	Feed mixtures	a lecture explain with view models	Daily and monthly tests
15		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. 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 (methodology, if any)	Fodder crops and pastures, Dr Ramadan ahmed
Main references (sources)	Fodder cultivation and exploitation, Dr. Mahdi abdel latif
Recommended supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on fodder crops

Course Description Form

1. Course Name:
<i>fodder crops – third stage - / College of Agriculture - University of Basrah</i>
2. Course Code:
FOCR314
3. Semester / Year:2025- 2026
Second semester 2025-2026
4. Description Preparation Date:

2-5-2026					
5. Available Attendance Forms: In presence					
My presence					
6. Number of Credit Hours (Total) / Number of Units (Total): 4 units: 2 hours					
7. Course Administrator's Name					
Name: mohameed.abdl_wahed Email: mohameed.abdl_wahed @uobasrah.edu.iq					
8. Course Objectives					
Course Objectives			1-knowing the most importantfodder crops 2- development of methods of cultivation and provision of fodder 3- identify the types of pastures		
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	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Student's awareness of the importance of the lecture and the product	Terms and definitions	- Theoretical lecture - Presentation	Discussion and oral questions

2	2	Student's awareness of the importance of the lecture and the product	The importance of forage crops .	• Theoretical lecture • Presentation	Discussion and oral questions
3	2	Student's awareness of the importance of the lecture and the product	The importance of leguminous forage crops .	• Theoretical lecture • Present	Discussion and oral questions
4	2	Student's awareness of the importance of the lecture and the product	Alfalfa crop	• Theoretical lecture • Presentation	Discussion and oral questions
5	2	Student's awareness of the importance of the lecture and the product	Egyptian alfalfa crop	• Theoretical lecture • Present	Discussion and oral questions
6	2	Student's awareness of the importance of the lecture and the product	Sweet alfalfa and soybean crop	• Theoretical lecture • Present	Discussion and oral questions
7	-----	Exam	-----	-----	
8	2	Student's awareness of the importance of the lecture and the product	The importance of grass forage crops ,barley crop	• Theoretical lecture • Presentation discussion	Discussion and oral questions
9	2	Student's awareness of the importance of the lecture and the product	Oat crop	• Theoretical lecture • Presentation discussion	Discussion and oral questions
10	2	Student's awareness of the importance of the lecture and the product	Corn and sorghum crop	• Theoretical lecture • Presentation	Discussion and oral questions

11	2	Student's awareness of the importance of the lecture and the product	Sudanese grass and millet crop	• Theoretical lecture • Presentation discussion	Discussion and oral questions
12	2	Student's awareness of the importance of the lecture and the product	Feed mixtures	• Theoretical lecture • Present	Discussion and oral questions
13	2	Student's awareness of the importance of the lecture and the product	Pastures and their types	• Theoretical lecture • Presentation discussion	Discussion and oral questions
14	2	Student's awareness of the importance of the lecture and the	Methods of estimating the condition of natural pasture	• Theoretical lecture	Discussion and oral questions
15		Exam	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.

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 (methodology, if any)	Fodder crops and pastures, Dr Ramadan ahmed
Main references (sources)	Fodder cultivation and exploitation, Dr. Mahdi abdel latif
Recommended supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on fodder crops

Course Description Form

1. Course Name:
<i>Legume Crops – Third stage - Department of Field Crops / College of Agriculture - University of Basrah</i>
2. Course Code:
LECR313
3. Semester / Year:
2025- 2026
4. Description Preparation Date:
20-5-2026
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):
4 units: 3 hours
7. Course Administrator's Name
Name: Dr. Sundus Abdulkariem Mohammed Email: sundus.mohammed@uobasrah.edu.iq
8. Course Objectives

Course Objectives			1 -Definition of legume crops, and what is their importance in human food 2 -The importance of legume crops to the soil 3 -Classification of crops of the leguminous family according to the growing season 4- The importance of crops of the leguminous family as animal feed		
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	Unit or Subject Name	Required learning outcomes	Learning Method	Evaluation Method
1	3	Leguminous seed crops and their importance	The student should be aware of the importance of legume crops and their types.	a lecture with an explanation, a presentation,	Oral discussion and questions
2	3	Nitrogen fixation, root nodule formation	The student should be aware of the importance of the process of atmospheric nitrogen fixation.	a lecture with an explanation, a presentation,	Oral discussion and questions
3	3	Intercropping	The student should understand the meaning and purpose of intercropping.	a lecture with an explanation, a presentation,	Oral discussion and questions

4	3	Beans, origin, economic importance, uses	The student should be able to identify the fava bean plant and its growth requirements.	a lecture with an explanation, a presentation,	Short exam
5	3	Nutritional value of beans, varieties, genetic sources	The student understands the importance of the crop and its nutritional value.	a lecture with an explanation, a presentation,	Oral discussion and questions
6	3	Nutritional value of beans, varieties, genetic sources	The student should be able to identify signs of maturity in the crop.	a lecture with an explanation, a presentation,	Oral discussion and questions
7	3	None	First-month exam	none	Oral discussion and questions
8	3	Chickpeas, economic importance, uses, components of the crop	The student should be able to identify the chickpea plant and its growth requirements.	a lecture with an explanation, a presentation,	Short exam
9	3	Chickpea crop varieties, nitrogen fixation in chickpeas, maturity and harvest	The student should be able to distinguish between chickpea varieties and signs of crop maturity.	a lecture with an explanation, a presentation,	Oral discussion and questions
10	3	Mung beans, economic importance, nutritional value, maturity and harvest	The student should be able to identify the mung bean plant and its growth requirements.	a lecture with an explanation, a presentation,	Oral discussion and questions
11	3	Cowpeas, economic importance, nutritional value, maturity, and harvest.	The student should be able to identify the bean plant and its growth requirements.	a lecture with an explanation, a presentation,	Oral discussion and questions

12	3	Soybeans, economic importance, nutritional value, maturity and	The student should be able to identify the soybean plant and its growth	a lecture with an explanation, a	Short exam
13	3	Field pistachios, economic importance, nutritional value,	The student should be able to identify the field pistachio plant and its	a lecture with an explanation, a	Discussion and oral questions
14	3	Peas, economic importance, nutritional value, maturity and	The student should be able to identify the pea plant, its growth	a lecture with an explanation, a	Discussion and oral questions
15	3	None	Second month exam	none	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

Required textbooks (methodology, if any)	Plant Ecology Book, written by Dr. Hikmat Al-Ani
Main references (sources)	Basics of Ecology book 2008, written by Dr. Abdel Qader Abdel
Recommended supporting books and references (scientific journals, reports...)	The book Physiology of Stress in Plants, written by Professor Dr. Moheb Saqr Taha
Electronic references, websites	Some research and articles on the plant environment

1. Course Name:
<i>Legume Crops practical – Third stage - Department of Field Crops / College of Agriculture - University of Basrah</i>
2. Course Code:
LECR313
3. Semester / Year:

2025- 2026					
4. Description Preparation Date:					
20-5-2026					
5. Available Attendance Forms:					
Attendance in field					
6. Number of Credit Hours (Total)					
2 hours per week / 4 units					
7. Course Administrator's Name					
Name: Fatimah Ali jamel			Email: Fatima chamel@uobasrah.edu.iq		
8. Course Objectives					
Course Objectives		1 -Definition of legume crops, and what is their importance in human food 2 -The importance of legume crops to the soil 3 -Classification of crops of the leguminous family according to the growing season 4- The importance of crops of the leguminous family as animal feed			
9. Teaching and Learning Strategies					
Strategy	• practical lectures in classrooms. • Presentations and video materials. • Group discussions.				
10. Course Structure					
Week	Hou rs	Unit or Subject Name	Required learning outcomes	Learning Method	Evaluation Method

1	2	Leguminous seed crops and their importance	The student should be aware of the importance of legume crops and their types.	Delivering theoretical and practical power point lectures and discussion groups	Daily and monthly tests
2	2	Nitrogen fixation, root nodule formation	The student should be aware of the importance of the process of atmospheric nitrogen fixation.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
3	2	Intercropping	The student should understand the meaning and purpose of intercropping.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
4	2	Beans, origin, economic importance, uses	The student should be able to identify the fava bean plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
5	2	Nutritional value of beans, varieties, genetic sources	The student understands the importance of the crop and its nutritional value.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
6	2	Nutritional value of beans, varieties, genetic sources	The student should be able to identify signs of maturity in the crop.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
7	2	None	First-month exam		-----
8	2	Chickpeas, botanical description	The student should be able to identify the chickpea plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion groups	Daily and monthly tests

9	2	Chickpea crop botanical description	The student should be able to distinguish between chickpea varieties and signs of crop maturity.	Delivering theoretical and practical power point lectures and discussion groups	Daily and monthly tests
10	2	Mung beans, botanical description	The student should be able to identify the mung bean plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
11	2	Cowpeas, botanical description	The student should be able to identify the bean plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
12	2	Soybeans, botanical description	The student should be able to identify the soybean plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
13	2	Field pistachios, botanical description	The student should be able to identify the field pistachio plant and its growth requirements.	Delivering theoretical and practical power point lectures and discussion	Daily and monthly tests
14	2	Peas, botanical description	The student should be able to identify the pea plant, its growth requirements and its economic importance.	Delivering theoretical and practical power point lectures and discussion groups	Daily and monthly tests
15	2	None	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. 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	
Required textbooks (methodology, if any)	Plant Ecology Book, written by Dr. Hikmat Al-Ani
Main references (sources)	Basics of Ecology book 2008, written by Dr. Abdel Qader Abdel
Recommended supporting books and references (scientific journals, reports...)	The book Physiology of Stress in Plants, written by Professor Dr. Moheb Saqr Taha
Electronic references, websites	Some research and articles on the plant environment

Theoretical Course Description

1. Course Name:
Field Crop Diseases / Theoretical
2. Course Code:
CRDS319
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
02/06/2026
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. Najlaa Hussein Mohammed Email: najlaa.mohammed@uobasrah.edu.iq					
8. Course Objectives					
Course Objectives			• Introduce students to the basic aspects of general plant pathology, particularly field crop diseases. • Teach students about all crop diseases and methods for isolating and diagnosing them. • Teach students about the different types of crop pathogens, the possibilities for preventing them, and methods for controlling them. • Teach students how to diagnose diseases affecting various crops in the field based on certain distinguishing signs and symptoms of each disease.		
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 basic aspects of field crop diseases..	Historical overview, economic importance of crop diseases, symptoms and signs.	• Theoretical lecture • Presentation • discussion	Discussion and oral questions

Second	2 hours	Students will be able to distinguish between living and non-living pathogens, pathogen characteristics, and disease cycles	Disease triangle, types of pathogens, pathogen characteristics, and disease cycle.	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	. Students will be able to distinguish the effects of pathogens on plant physiology.	Effect of pathogens on plant physiological functions.	• Theoretical lecture • Presentation	Discussion and oral questions
Fourth	2 hours	. Students will be aware of how plants defend themselves against various pathogens.	Mechanisms and defense mechanisms in plants against pathogens.	• Theoretical lecture • Presentation • presentations	Earth pond design project
Fifth	2 hours	Students will be able to recognize the differences in disease symptoms and how to distinguish between them	Diseases of wheat and barley.	• Theoretical lecture • Presentation • Group discussion - Video presentations	Discussion and oral questions
Sixth	2 hours	. None	First Monthly Exam	None	None
Seventh	2 hours	Students will be able to identify the different types	Diseases of wheat and barley.	• Theoretical lecture • Presentation	Discussion and oral questions

Eighth	2 hours	. Students will be able to identify and distinguish	Rust and smut diseases of maize and sorghum.	• Theoretical lecture • Presentation	Discussion and oral questions
Ninth	2 hours	Students will be able to understand the basics of	Completion of maize diseases and sunflower diseases.	• Theoretical lecture • Presentation	Discussion and oral questions
Tenth	2 hours	Students will be able to identify diseases of safflower and sesame crops..	Safflower and sesame diseases.	• Theoretical lecture • Presentation	Comparative report between closed culture systems,
Eleventh	2 hours	None.	Second Monthly Exam	None	None
Twelfth	2 hours	Students will be able to identify the distinctive features of each cotton	Cotton diseases.	• Theoretical lecture • Presentation	Discussion and oral questions
Thirteenth	2 hours	None	General review	• Theoretical lecture • Presentation	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)	Fayyad, Muhammad Amer and Abbas, Muhammad Hamza. (2018). Plant Diseases
Main References (Sources)	Al-Haiti, Ayad Abdul-Wahid Muhammad and others (2021).. The Comprehensive
Recommended Books and References (Scientific Journals, Reports...)	.no

Electronic References, Websites	No
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Practical Course Description

1. Course Name:	
Plant Diseases Practical / Practical	
2. Course Code:	
CRDS319	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
18/4/2026	
5. Available Attendance Forms:	
Attendance within the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2hours weekly / 3units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Hala Abdul Jabbar halaa.Abduljabar@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	2	That the student becomes familiar with laboratory tools and safety procedures. General guidelines in the plant pathology	1)Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions
2	2	Wheat diseases with the preparation and examination of temporary microscopic slides of infected plants.	2)Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions
3	2	Wheat diseases with the most important symptoms and signs on infected plants in the laboratory	3)Practical lecture, presentation	• Practical lecture, presentation	Discussion and oral questions
4	2	Barley diseases with the isolation of fungal pathogens from infected plant	4)Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions

5	2	Rice diseases with the examination of isolated fungal	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
6	2	First Monthly Exam	Practical lecture, presentation	-	-
7	2	Sorghum diseases with slide examination	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
8	2	Maize diseases with slide examination	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
9	2	second Monthly Exam	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
10	2	Sugarcane diseases with the identification of integrated plant	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
11	2	Sunflower diseases with the identification of biological	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
12	2	Beet diseases with the identification of biological	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
13	2	Tobacco diseases with the identification of biological	Practical lecture, presentation	Practical lecture, presentation	Discussion and oral questions
14	2	General review and comprehensive practical	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	
Plant Pathology" –Agrios و "Introduction to Plant Diseases" –Brown).	

Theoretical Course Description

1. Course Name:
Seed technology / Theoretical
2. Course Code:
SETE318
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
02/05/2026
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 4 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Kareem Hanoon Mohsan Kareem.mohsan@uobasrah.edu.iq
8. Course Objectives

Course Objectives			• Teaching students the basic sciences of sssds production. • Teaching students the basic requirements for seed technology • Teaching students for future employment in ministries and institutions related to agricultural sciences. • Preparing scientific and academic researchers agricultural seed production		
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	3 hours	Students will be able to identify the basic aspects of seed technology.	Introduction to seed technology - Definition of seed technology - Seed - Types of seeds -	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	3 hours	Students will be able to identify seeds for diagnosis.	Morphological aspects of seeds - Physical properties of seeds	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used
Third	3 hours	Students will be able to identify the characteristics and traits of good seeds	Characteristics of good seeds - Seed grades.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Fourth	3 hours	Students will be able to identify the stages of germination and the factors affecting them.	Germination - Stages of germination Factors affecting germination	• Theoretical lecture • Presentation • Group discussion - Video presentations	Earth pond design project
Fifth	3 hours	Students will be able to identify how seeds absorb water and the factors affecting it	absorption, factors affecting absorption, the relationship between germination and	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Sixth	3	None	First Monthly Exam	None	None
Seventh	3 hours	Students will be able to identify germination stimulants and inhibitors from seed treatment	Germination stimulants and inhibitors Gibberellins - Cytokinins - Absciscic acid - Ethylene gas	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Eighth	3 hours	Students will be able to identify the stages of cultivar production and selection.	Seed production stages Production of a superior variety - Variety selection	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Ninth	3 hours	Students will be able to identify aspects and stages of maintaining genetic purity	General principles of seed production - Aspects and stages of maintaining	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Tenth	3 hours	Learn about the importance of producing self-pollinated seeds.	Maintaining nucleus and breeder seeds for self-pollinating	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Eleventh	3 hours	Recognizing the importance of producing seeds for mixed-pollinated crops	Maintaining nucleus and breeder seeds for cross-pollinating crops	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Twelfth	3 hours	None	Second Monthly Exam	None	None

Thirteenth	3 hours	Students will be able to identify seed pests, their types, and their	Seed Pests Insects - Types - Living Conditions	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Fourteenth	3 hours	Students will be able to understand the	Storing Grain Seeds Storage	• Theoretical lecture • Presentation	Discussion and oral questions
Fifteenth	3 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)	None
Main References (Sources)	1-Cereal and Legume Crops - by Nabil Ali Khalil, Al-Mutawali Abdullah Al-Mutawali, Magdy Mohamed Shafiq, and Wagih Abdel-Azim Al-Marshadi. Faculty of Agriculture, Cairo University, 2015. 2-CROP SEEDS Production & Quality ;Abdullah ;k:Al-Fakhry:Ahmad,S,khalaf. 3-TECHNOLOGY OF CEREALS with SPECIAL REFERENCE TO WHEAT BY N. L. Kent. 4-Production Of Organic Seeds And Seedlings by; Mohamed bin kazer Ministry of Environment Water &
Recommended Books and References (Scientific Journals, Reports...)	None
Electronic References, Websites	None

Course Description Form

1. Course Name:					
Seed technology practical					
2. Course Code:					
SETE318					
3. Semester / Year:					
2025/2026					
4. Description Preparation Date:					
2026					
5. Available Attendance Forms:					
In the quality laboratory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 hours: 4 units					
7. Course Administrator's Name (Mention All, If More Than One Name)					
Name: Sabreen hazim Email: Sabreen.hazem@uobasrah.edu.iq					
8. Course Objectives					
Course Objectives			Introducing students to the composition of seeds, their natural and chemical characteristics, and how to produce seeds		
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method

1	2	Students' knowledge of classification levels	Getting to know the seeds: their shapes, colors, sizes, ways of spreading	Lecture with explanation and presentation	Presentation of the models and methods of identifying them."**
2	2	Students' knowledge of classification levels	Sampling.	Lecture with explanation and presentation	Sampling process
3	2	Students' knowledge of classification levels	Examination of laboratory and standard germination and the effect of some plant hormones on it	Lecture with explanation and presentation	Conducting a germination experiment
4	2	Students' knowledge of classification levels	Hygiene check	Lecture with explanation and presentation	Practical
5	2		Assignment 1		
6	2	Students' knowledge of classification levels	Checking the moisture content of the seed	Lecture with explanation and presentation	Displaying samples
7	2	Students' knowledge of classification levels	Testing the electrical conductivity of the seed	Lecture with explanation and presentation	Discussion
8	2	Students' knowledge of classification levels	Testing the genetic purity of the seed	Lecture with explanation and presentation	Discussion
9	2	-----	Assignment 2	-----	-----

10	2	Students' knowledge of classification levels	Seed strength tests: Germination test to accelerate age, cold test, nitrazolium test (vitality test), brick powder test	Lecture with explanation and presentation	Discussion with presentation
11	2	Students' knowledge of classification levels	seed certification.	Lecture with explanation and presentation	Practical
12	2	Students' knowledge of classification levels	field inspection.	Lecture with explanation and presentation	Displaying sample forms
13	2		Assignment 3		
14	2	Students' knowledge of classification levels	A scientific visit to the laboratories of the General Authority for the examination and certification of seeds .		

11. Course Evaluation

Distribution of the score out of 20 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)	Field crop seeds (Dr. Abdullah Qasim Al-Fakhry)
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Theoretical Course Description

1. Course Name:
Genetics / Theoretical
2. Course Code:
GENE335
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
02/05/2026
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 4 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Muhamed Auda Kalaf Email: <u>mohammad.kalaf@uobasrah.edu.iq</u>
8. Course Objectives

Course Objectives			• Definition of genetics, and its importance in agricultural crops. • Genetic laws and their application. • Sex determination and sex linkage.		
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	3hours	Students will be able to understand genetics and its	Introduction to Genetics - Definition of Genetics - Its	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	3 hours	Mendelian inheritance - Mendel's first law - Mendel's second law -	Students will be able to identify Mendelian inheritance.	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	3 hours	Allelic gene overlap - Non-allelic gene overlap - Different cases of superiority	Students will be able to identify allelic and non-allelic gene overlap and different cases of superiority.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Fourth	3 hours	Students will be able to understand the concept of multiple alleles and examples of multiple alleles, what sex chromosomes	Students will be able to understand the concept of multiple alleles and examples of multiple alleles, what	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Fifth	3 hours	Students will be able to understand the concept of linkage and crossing-over, types of linkage, the mechanism of crossing-over, the theories that	Linkage and crossing over - Types of linkage - Mechanism of crossing over - Theories that explain the phenomenon of genetic	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Sixth	3 hours	Genetic maps - How to draw genetic maps - The importance of genetic maps	Students will be able to know what genetic maps are, how to draw genetic maps, and the importance of	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Seventh	3 hours	None	First Monthly Exam	None	None
Eighth	3 hours	Genetic mutations - their types - their origin - their means of occurrence - their importance and cytoplasmic inheritance - examples of cytoplasmic inheritance - quantitative inheritance - examples of quantitative inheritance	Students will be able to identify genetic mutations, their types, origins, and the means by which they occur.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Ninth	3 hours	Genetic material in living organisms - characteristics of living matter - DNA structure - RNA structure - the most important differences between them.	Students will be able to understand what genetic material means in living organisms, the characteristics of living matter, the structure of DNA.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Tenth	3 hours	Evidence that DNA is the genetic material in living organisms - Evidence that RNA is the genetic material in some viruses	Students will be able to identify evidence that DNA is the genetic material in living organisms	• Theoretical lecture • Presentation • Group discussion	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	3 hours	DNA replication (DNA replication) - Hypotheses of replication methods - Semiconservative replication - Conservative method - RNA replication from DNA	Students will be able to identify what DNA replication is (DNA replication).	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Twelfth	3 hours	Protein synthesis - transcription and translation	Students will be able to identify how proteins are synthesized, replicated, and	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Thirteenth	3 hours	Genetic engineering - its benefits - its limitations - how to carry out the gene transfer process - applications of genetic engineering	Students will be able to understand the concept of genetic engineering, its benefits and limitations.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Fourteenth	3 hours	None	Second Monthly Exam	None	None
Fifteenth	3 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- Fundamentals of breeding and genetics of field crops. Dr. Hamid Jaloub		
Main References (Sources)			No		
Recommended Books and References (Scientific Journals, Reports...)			No		
Electronic References, Websites			No		

practical Course Description

1. Course Name:

Genetics Practical	
2. Course Code:	
GENE335	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
02/05/2026	
5. Available Attendance Forms:	
Lab Attendance and Field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2hours per week / 4 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Fatima ali jamel	Email: fatima.chamel@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• Definition of genetics, and its importance in agricultural crops. • Genetic laws and their application. • Sex determination and sex linkage.
9. Teaching and Learning Strategies	
Strategy	• 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	2hours	Students will be able to	Introduction in genetics	• Presentation • Discussion	Discussion and oral
Second	2 hours	Students will be able to understand	Mandell's first law	• Presentation • Discussion	Discussion and oral questions
Third	2 hours	Students will be able to understand	Mandell's second law	• Presentation • Group discussion	Discussion and oral questions
Fourth	2 hours	Students will be able to understand	Types of Dominance	• Presentation • Group discussion	Discussion and oral questions
Fifth	2 hours	Students will be able to understand branching	Branching Method	• Presentation • Group discussion	Discussion and oral questions
Sixth	2 hours	Students will be able to understand chi	Chi – Squares test	• Presentation • Group discussion	Discussion and oral questions
Seventh	2 hours	None	exam	None	None
Eighth	2 hours	Students will be able to understand	Genetic Interaction	• Presentation • Group discussion	Discussion and oral questions
Ninth	2 hours	Students will be able to understand	Multiple alleles	• Presentation • Group discussion	Discussion and oral questions
Tenth	2 hours	Students will be able to understand sex designation	Sex designation & sex linkage	• Presentation • Group discussion	Comparative report between closed
Eleventh	2 hours	Students will be able to understand linkage	Linkage and crossing over	• Presentation • Group discussion	Discussion and oral questions
Twelfth	2 hours	Students will be able to understand genetics mapping	Genetic mapping	• Presentation • Group discussion	Discussion and oral questions

Thirteenth	2 hours	Students will be able to understand quantitative genetics	Quantitative genetics	• Presentation • Group discussion	Discussion and oral questions
Fourteenth	2 hours	Students will be able to understand dead genes	Dead genes		
Fifteenth	2 hours		exam	None	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)	Foundations of breeding and genetics of field crops , Dr.Hamid Globe
Main References (Sources)	Al-wajeez in genetics, written by Dr.Amin Abdul Jabbar
Recommended Books and References (Scientific Journals, Reports...)	Scientific journals
Electronic References, Websites	Some research and articles on genetics

Theoretical Course Description

1. Course Name:
Crops Management / Theoretical
2. Course Code:
CRMA415
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:

02/04/2026

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. Sundus Abdulkariem Mohammed **Email:** sundus.mohammed@uobasrah.edu.iq

8. Course Objectives

Course Objectives

- Teaching students the basic sciences of field science.
- Teaching students the basic requirements for pre-planting crop management.
- Teaching students for future employment in ministries and institutions related to agricultural sciences.
 - Preparing scientific and academic researchers in the field of field management.

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
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First	2 hours	Students will be able to identify the basic aspects of crop management:	General introduction - Concept of crop - Concept of crop management	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to identify the first crop maintenance operations before planting	soil maintenance before planting - plowing - its concept - its benefits - conditions for good plowing - types of plowing - types of plows	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	Students will be able to identify the processes that follow plowing to prepare the crop for	Harrowing- Benefits of Harrowing - Depth of Harrowing - Thinning machines -	• Theoretical lecture • Presentation • Group discussion • Video presentati	Discussion and oral questions
Fourth	2 hours	Students will be able to recognize the importance of planting dates	-Planting dates - Cumulative heat units (GDD) and their relationship to planting dates	• Theoretical lecture • Presentation • Group discussion	Earth pond design project
Fifth	2 hours	Students will be able to calculate seed quantity and plant density.	Seed quantity - Plant density - The role of plant density in intercepting light and increasing yield - Plant density	• Theoretical lecture • Presentation • Group discussion - Video presentations	Discussion and oral questions
Sixth	2 hours	None	First Monthly Exam	None	None

Seventh	2 hours	Students will be able to identify soil types, how to improve soil fertility, soil conditions suitable for field crop cultivation, saline and alkaline soils, and improving soil fertility.	soil conditions suitable for field crop cultivation, saline and alkaline soils, and improving soil fertility.	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Eighth	2 hours	Students will be able to identify the types of fertilizers, methods of adding them, and their importance to the crop	soil improvers, types of fertilizers, organic mineral fertilizers, and green manure.	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Ninth	2 hours	Students will be able to identify the appropriate planting method for the crop and determine planting depths.	Planting methods - Planting depth -	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions

Tenth	2 hours	Learn about the importance of irrigation and the basics of designing and constructing irrigation methods, the advantages and disadvantages of each methods	Irrigation - the importance of water for the plant - the number of irrigations for the crop - water consumption - water use efficiency	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Eleventh	2 hours	Learn about methods of controlling weeds, diseases and insects that infect crops.	Weed control - the most important pesticides used and recommended for control - insect and diseases that infect crops -	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Twelfth	2 hours	None	Second Monthly Exam	None	None

Thirteenth	2 hours	Students will be able to identify signs of crop maturity, types of maturity, and determining harvest dates.	Maturity and harvesting - physiological maturity - full maturity - signs of crop maturity.	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Fourteenth	2 hours	Students will be able to know the correct methods for storing yield, the conditions for good storage	types of stores and storage, seed and grain stores and their specifications and storage conditions in them.	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
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)	Scientific foundations for field crop management, production and improvement. Hussein Al-Muaini and Mohammed Awad Ghadir Al-Obaidi. College of Agriculture, University of Anbar, 2018
Main References (Sources)	-Plant Nutrition Guide. Yousef Mohammed Abu Dahi and Mu'ayyad Ahmed Al-Younis. College of Agriculture, University of Baghdad, 1988. - Field Crop Production and Improvement (Part One) by Abdul Hamid Ahmed Al-Younis, University of Baghdad - College of Agriculture, 1993. -rinciples of Field Crop Production by
Recommended Books and References (Scientific Journals, Reports...)	None
Electronic References, Websites	None

Practical Course Description

1. Course Name:
Crops Management / Practical
2. Course Code:
CRMA415
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
02/04/2026
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: sabreen hazim		Email: sabreen.hazim@uobasrah.edu.iq			
8. Course Objectives					
Course Objectives					
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			Learning Method	Evaluation Method

First	2hours	clear yakun altulaab qadirin ealaa 'an yuhadiduu aljawanib al'asasiat li'iidarat almahsul yakun altulaab qadirin ealaa 'an yataearafuu ealaa awl eamaliaat alhaqliat litahdir alturbat wakhidmatiha yakun altulaab qadirin ealaa altaearuf eamaliana bialeamaliaat alati tali eamaliat alharathat litahyiat ziraeat almahsuli. yakun altulaab qadirin ealaa altaearuf kayfiat anibat albudhur yakun altulaab qadirin ealaa	General Introduction - Crop Concept - Crop Management Concept	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
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Second	2 hours	Students will be able to identify the first field operations for soil preparation and cultivation.	Soil Preparation Before Planting - Tillage - Its Concept - Its Benefits - Conditions for Good Tillage - Types of Tillage - and Understanding	• Practical lecture • Presentation • Group discussion	Quick test Students identify the appropriate type for a group of production units mentioned in the questions
Third	2 hours	Students will be able to practically identify the operations that follow the tillage process to prepare the crop for planting.	Smoothing - Benefits of Smoothing - Depth of Smoothing - Tillage Equipment - Leveling - Benefits of Leveling - Conditions of Leveling - Leveling Equipment - Field Division	• Practical lecture • Presentation • Group discussion	Solving practical problems
Fourth	2 hours	Students will be able to practically identify the operations that follow the tillage process to prepare the crop for planting.	Seed Germination, Its Types, and the Conditions Affecting It, and the Sequence of Processes During Germination	• Explanation by the subject teacher • Explanation by the farm management	Discussion between students and between them and the subject teacher or farm management
Fifth	2 hours	Students will be able to identify seed germination.	Crop Maintenance Operations, Planting Methods, Weeding, and Thinning Operations	• Practical lecture • Viewing samples of materials and equipment • Performing calculations using	Solving practical problems

Sixth	2 hours	Students will be able to practically perform crop cultivation operations.	Crop Maintenance Operations, Planting Methods, Weeding, and Thinning Operations	• Explanation by the subject teacher • Explanation by the farm managem	Discussion between students and between them and the subject teacher or farm
Seventh	2 hours	None	First monthly exam	None	None
Eighth	2 hours	Students will be able to identify irrigation operations	Irrigation - Methods for Determining Plant Irrigation Needs - Methods and Types of	• Practical lecture • Presentation • Video	Discussion and oral questions
Ninth	2 hours	Students will be able to identify the types of fertilizers, their	Fertilizers - Fertilizer Classification - Methods of Fertilizer Addition - Organic Fertilizers	• Practical lecture • Presentation • Video	Discussion and oral questions
Tenth	2 hours	Students will be able to identify the planting method and how it differs from intercropping.	Intercropping and the Interaction Between the Different Component Crops	• Practical lecture • Presentation • Video	A report discussing the system that is most suitable for the local environment and the most
Eleventh	2 hours	Identify methods for controlling weeds,	Each student will prepare a report on the previous	• Practical lecture • Presentation • Video	Discussion and oral questions

Twelfth	2 hours	None.	. Weed Control - The Most Important Pesticides Used and Recommended	• Practical lecture • Presentation • Video	Assigning students to transport a group of live fish by different
Thirteenth	2 hours	Students will be able to identify signs of crop maturity, types of maturity, and determining harvest dates.	Monthly Exam Second	• Practical lecture • Presentation • Video	Discussion and oral questions
Fourteenth	2 hours	Students will be able to know the correct methods for storing crops and the conditions for good storage.	aking students to an agricultural research station to learn about the stages of ripening and harvesting— the difference between physiological ripeness and full ripeness— and the	None	None
Fifteenth	2 hours	None.	A scientific trip to seed and grain stores to learn about storage types, storage conditions, and methods for drying field produce. General	• 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)	No
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

1. Course Name: Cultivation of marsh lands
(Marshland Cultivation) - Fourth Stage - Department of Field Crops - College of Agriculture - University of Basra
2. Course Code: No
MACU416
3. Semester / Year:
First semester / 2025- 2026
4. Description Preparation Date:
31/5/2026
5. Available Attendance Forms:
Attendance in Crop Hall No. 2
6. Number of Credit Hours (Total)
Number of Units (Total): 3 units: 2hours
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Lamiaa Mahmood Salman			Email: : lamiaa.salman@uobasrah.edu.iq		
8. Course Objectives					
Course Objectives			• Understand the meaning of marshes and their environmental importance • Understand the areas where marshes are distributed and their divisions • Introduce the student to the dangers of draining marshes • Understand the benefits of marshes • Introduce the student to the physical and chemical characteristics of marshes • Understand the sediments in marshes, their mineralogy, and the importance of		
9. Teaching and Learning Strategies					
Strategy		THE COURSE INCLUDES (2) THEORETICAL HOURS AND (3) PRACTICAL HOURS - 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	2	Introducing students to the meaning of marshes and their environmental importance	Definition of marshes and water swamps - The environmental importance of the Iraqi marshes	Lecture with explanation and presentation	. Display screen + whiteboard
2	2	Introducing students to the areas where marshes are distributed globally and in Iraq, the percentage of marshland area	Geography of the marshes - climate of the marshes - geography of some of the main marshes	Lecture with explanation and presentation	Display screen + whiteboard

3	2	Introducing students to the stages of marshland division and the mechanism by which they were divided	Division of the central and southern marshes - division of the marshes according to water quality - tidal phenomena	Lecture with explanation and presentation	. Display screen + whiteboard
4	2	Introducing students to the stages of marsh drainage and the resulting climatic impacts	Drying of the marshes and its impact on the different climatic characteristics of southern Iraq	. Lecture with explanation and presentation	. Display screen + whiteboard
5	2	Introducing students to the characteristics and importance of marshland environments for Iraq and the world as a whole.	Environments of the Iraqi marshes - Environmental division of the marshes - The environmental importance of the Iraqi marshes	. Lecture with explanation and presentation	. Display screen + whiteboard
6	2	First semester exam			
7	2	Benefits of the Marshes - Geographical Distribution of the Marshes	Introducing the student to the great benefits of the marshes of the marshes.	. Lecture with explanation and presentation	. Display screen + whiteboard
8	2	Evaluating the physical properties of the marsh soil in southern Iraq.	Introducing the student to the physical properties of the Iraqi marshes.	. Lecture with explanation and presentation	. Display screen + whiteboard
9	2	Introducing the student to the vital functions and primary productivity of aquatic plants in marshes	. The vital functions of marshes - the primary productivity of aquatic plants – primary	. Lecture with explanation and presentation	. Display screen + whiteboard

10	2	Addressing some environmental and morphological studies of the marshes of southern Iraq, in addition to addressing the sources of nutrition, drainage, morphological	The effect of drying and burning on marsh soils. Physical and chemical properties of marsh sediments after wetting	. Lecture with explanation and presentation	. Display screen + whiteboard
11	2	Introducing the student to sediments, their types and components	Marsh water quality - marsh water quality before drying -	. Lecture with explanation and	. Display screen + whiteboard
12	2	Addressing the dangers threatening the marshes from burning and drying and the resulting physical and chemical damage to the soil and plants of the marshes.	Functional diversity - the relationship between environmental variables in water and biological communities	. Lecture with explanation and presentation	. Display screen + whiteboard
13	2	Introducing the student to the type and quality of marsh water before and after drying, in deep marshes and restored marshes.	Life functions of marshes - primary productivity of aquatic plants - primary productivity of phytoplankton	. Lecture with explanation and presentation	. Display screen + whiteboard
14	2	Introducing the student to the functions prevalent in the marshes and the resulting relationship with environmental variables in the marsh waters and the rest of the biological communities present in the region.	Food networks and chains in the marshes - ecological cycles of elements in wetlands	Lecture with explanation and presentation	. Display screen + whiteboard

15	2	second semester 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)			No		
Main References (Sources)			No		
Recommended Books and References (Scientific Journals, Reports...)			No		
Electronic References, Websites			Lectures from websites		

Course Description Form

1. Course Name:
<i>Cultivation of marshlands - Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah</i>
2. Course Code:
MACU416
3. Semester / Year:
2025-2026
4. Description Preparation Date:
15/ 6/2026

5. Available Attendance Forms:					
Attendance in the laboratory					
6. Number of Credit Hours (Total) / Number of Units (Total):					
3 units: 2 hours					
7. Course Administrator's Name					
Name;Miraje Mustafa Mohammed			Email: miraje.mohammed@uobasrah.edu.iq		
8. Course Objectives					
Course Objectives		1 -Identify the marshes of Iraq, their location, and importance 2 -Identifying the climatic and oceanic conditions and their fundamental relationship with the plant and animal organisms coexisting in the marshes. 3 -Identify the effect of climatic conditions on the growth of different plants 4- Introducing students to environmental pollution and drought, its harms, and future			
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	Unit or Subject Name	Required learning	Learning Method	Evaluation Method
1	2	Marshes of southern Iraq	The student should be able to identify the marshes.	- Practical lecture - Presentation Group discussion	Discussion and oral questions

2	2	Marsh environments	The student should be able to understand the nature of the special environment prevailing in the marshes of southern Iraq.	• Practical lecture • Presentation Video	Discussion and oral questions
3	2	Marsh patterns, types, and divisions	The student should be able to identify the types and their locations.	• Practical lecture • Presentation Video	Discussion and oral questions
4	2	Marshes of Basrah Governorate	The student should be familiar with the causes of the marshes' drying up and the results of this process.	• Practical lecture • Presentation Video	Discussion and oral questions
5	2	Marsh sediments	The student should be aware of the types of sediments and the reasons for their formation.	• Practical lecture • Presentation Video	Quick test: Students identify the appropriate type for a group of production units mentioned
6	2	-----	-----	• Practical lecture • Presentation Video	Discussion and oral questions
7	2	None	First-month exam	None	none
8	2	Plant environment - and aquatic plants spread in	The student should be able to identify the nature of water	• Practical lecture • Presentation Video	Discussion and oral questions

9	2	Division of plants found in the aquatic environment, morphological characteristics of submerged plants	To enable the student to know the marsh plants and their types.	• Practical lecture • Presentation Video	Discussion and oral questions
10	2	Anatomical characteristics of submerged plants	The student will acquire knowledge of the anatomical characteristics of submerged plants.	• Practical lecture • Presentation Video	Discussion and oral questions
11	2	Floating plants, their anatomical and morphological characteristics	The student will acquire knowledge of the anatomical characteristics of floating plants.	• Explanation by the subject teacher Explanation by the farm management in the event of a field visit	Quick test Students identify the appropriate type for a group of production units mentioned in the questions
12	2	Mesophytes, the biodiversity of aquatic plants in the marshes	The student will acquire knowledge of the anatomical characteristics of floating plants.	• Practical lecture • Presentation Video	Discussion and oral questions
13	2	Environmental pollution, introduction, definition, and	The student should be familiar with the causes of marsh	• Practical lecture • Presentation Video	Discussion and oral questions

14	2	Integrated Life Guide to Marsh Environments	The student should be familiar with the nature and types of organisms found in the marsh environment.	• Practical lecture • Presentation Video	Discussion and oral questions
15	2	None	Second month exam	None	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 (methodology, if any)	Plant Ecology Book, written by Dr. Hikmat Al-Ani
Main references (sources)	Basics of Ecology book 2008, written by Dr. Abdel Qader Abdel
Recommended supporting books and references (scientific journals, reports...)	The book Physiology of Stress in Plants, written by Professor Dr. Moheb Saqr Taha
Electronic references, websites	Some research and articles on the plant environment

Course Description Form

1. Course Name:
Molecular biology of plants
2. Course Code:
MOGE425
3. Semester / Year: First semester

2025-2026					
4. Description Preparation Date:					
2 /05/ 2026					
5. Available Attendance Forms: Available at the hall					
Attending college within practical Classification laboratory					
6. Number of Credit Hours (Total) / Number of Units (Total):					
3 hours :3 units					
7. Course Administrator’s Name (Mention All, If More Than One Name)					
Name: Asst. prof. Dr. Mohanad abdulhussien Abbood alsulaiman mohanad.alsulaiman@uobasrah.edu.iq					
8. Course Objectives					
Course Objectives		• Introducing the student to the science of Molecular biology of plants and its importance • Molecular biology of plants and agricultural			
9. Teaching and Learning Strategies					
Strategy	• Introducing the student to the science of molecular biology of plants and its importance • Molecular biology of plants and agricultural • Molecular biology of plants methods and types (direct and indirect). • The most important devices used in measuring distances, areas, and				
10. Course Structure					
Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluati on
1	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Introduction on Molecular biology	Professor’s explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluati on by quick Quiz at each new lecture

2	3	The student should be able to understand and comprehend the theoretical material. The	Benefits of Biotechnology	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the	Evaluation by quick Quiz at each new lecture
3	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Plant and animal cell difference's	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
4	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	What DNA and RNA, and their structure	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
5	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and	What is the difference between DNA and RNA	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
6	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Gene structure and Regulation	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	First exam

7	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Gene activation and polymerase chain reaction	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
8	3	The student should be able to understand and comprehend the theoretical material. The student pass	DNA replication	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
9	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Protein synthesis	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture

10	3	The student should be able to understand and comprehend the theoretical material. The student pass	Gene Mechanism	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
11	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Extranuclear DNA	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
12	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Mutation	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
13	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	DNA repair Mechanism	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
14	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Gene Transfer through Agrobacteria	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Second exam

15	3		General Review		
11. Course Evaluation					
The degree of 100 will distributed according to the tasks assigned to the student, such as daily preparation, daily oral exams, monthly exams, and reports.					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)		1-مبادئ الوراثة الجزيئية، 2013. تأليف دكتور محمد باقر صاحب و د.علي حمود السعيد و حيدر كامل يدان 2-اساسيات التقنية الحيوية، 2014. تأليف الدكتور علي ابراهيم عبدة و الدكتور احمد عبد الفتاح محمود			
Main References (Sources)		-مبادئ الوراثة الجزيئية، 2013. تأليف دكتور محمد باقر صاحب و د.علي حمود السعيد و حيدر كامل يدان 2-اساسيات التقنية الحيوية، 2014. تأليف الدكتور علي ابراهيم عبدة و الدكتور احمد عبد الفتاح محمود			
Recommended Books and References (Scientific Journals, Reports...)		1-Genetics, P.S. VERMA, 200. S.CHAND and Company LTD. 7361, RAM NAGER, NEW DELHI-110 056 2- Molecular life of the plants,2013. Russell Jones, Howard Thomas, Susan Waaland			
Electronic References, Websites		http://lifeofplant.blogspot.com/2011/05/chloroplast-dna.html			

Course Description Form

1. Course Name:
English language– fourth stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
ENGL406
3. Semester / Year: 2026
First semester-fourth stage 2025-2026
4. Description Preparation Date:

12-4-2026

5. Available Attendance Forms:**In presence full time****6. Number of Credit Hours (Total) / Number of Units (Total):****1:1****7. Course Administrator's Name****Name:** Khawla Dawood**Email:** khawla.dawood@uobasrah.edu.iq**8. Course Objectives****Course Objectives**

Providing the fundamental principles related to the agricultural specialization, which serve as an entry point to help the student understand the upcoming subjects, develop the student's language, and familiarize them with some of the terminologies used

9. Teaching and Learning Strategies**Strategy**

The lesson includes (2) hours of theory distributed over 15 weeks.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	1	To be able to understand and assimilate scientific information and the ability to discriminate	Plant parts	a lecture with an explanation, a presentation,	Discussion

2	1	To be able to understand and assimilate scientific information and the ability to discriminate	Plant function	a lecture with an explanation, a presentation,	Discussion
3	1	To be able to understand and assimilate scientific information and the ability to discriminate	Plant parts	a lecture with an explanation, a presentation,	Discussion
4	1	To be able to understand and assimilate scientific information and the ability to discriminate	Plant shoot system	a lecture with an explanation, a presentation,	Discussion
5	1	To be able to understand and assimilate scientific information and the ability to answer	Fertilizers	a lecture with an explanation, a presentation,	Discussion, quiz
6	1	To be able to understand and assimilate scientific information and the ability discriminate	Fertilizers classification	a lecture with an explanation, a presentation,	Discussion
7		First exam			

8	1	To be able to understand and assimilate scientific information and the ability to discriminate	Irrigation	a lecture with an explanation, a presentation,	Discussion
9	1	To be able to understand and assimilate scientific information and the ability to	Irrigation methods	a lecture with an explanation, a presentation,	Discussion
10	1	To be able to understand and assimilate scientific information and the ability to discriminate	Renewable energy	a lecture with an explanation, a presentation,	Discussion
11	1	To be able to understand and assimilate scientific information and the ability to discriminate	Solar energy	a lecture with an explanation, a presentation,	Discussion
12	1	To be able to understand and assimilate scientific information and the ability to discriminate	Wind energy	a lecture with an explanation, a presentation,	Discussion
13	1	To be able to understand and assimilate scientific information and the ability to discriminate	Renewable energy	a lecture with an explanation, a presentation,	Discussion , quiz
14	1	To be able to understand and assimilate scientific information and the ability discriminate	Revision	a lecture with an explanation, a presentation,	Discussion

15	1	To be able to understand and assimilate scientific information and the ability to discriminate	Second exam	a lecture with an explanation, a presentation,	Discussion
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 (methodology, if any)			English in Agriculture by Alan Mountford		
Main references (sources)			No		
Recommended supporting books and references (scientific journals, reports...)			No		
Electronic references, websites			Some articles and scientific sites		

Course Description Form

1. Course Name
weeds biology (Theoretical)
2. Course Code
WECO418
3. Semester/Year
First Semester / Fourth Year
4. Date of preparation of this description
27 / 4 / 2026
5. Available attendance forms
In-person
6. Number of credit hours (total) / number of units (total)
4 Units: 3 hours

7. Course administrator's name (if more than one name is mentioned)					
Name: Kazem Katami Jaber Email:kadham.gaber@uobasrah.edu.iq					
8. Course Objectives					
• Study and understand perennial toxic weeds plants. • Identify effective methods to eliminate these harmful plants. • Study the spread and reproduction of toxic weeds plants and their environmental impacts.			Course Objectives		
9. Teaching and learning strategies					
In-person lectures over 13 weeks, including two monthly exams and daily quizzes.					Strategy
10. Course Structure					
Evaluation method	Learning method	Unit or subject name	Required Learning	Hours	Week
Daily exam	Lecture with explanation in presentation	Historical overview of toxic weed plant studies	Students will be able to recognize toxic weed species and understand their origin	3	1
Daily exam	Lecture with explanation in presentation	Scientists interested in toxic weed plants	Students will be able to identify the most important scientists and researchers who specialized in the field of weed control.	3	2
Daily exam	Lecture with explanation in presentation	Reproduction and transmission methods of these plants	Students' knowledge of weed reproduction methods and the types of	3	3

			means by which they spread		
Daily exam	Lecture with explanation in presentation	Classification of weeds plants by life cycle	Students will be able to understand the classifications of weeds and their life cycle in the fields.	3	4
Daily exam	Lecture with explanation in presentation	Study of Hydrophytes and their environmental harm	Students must be able to identify weeds that live in aquatic environments and understand their environmental impacts	3	5
Daily exam	Lecture with explanation in presentation	Methods to reduce the spread of toxic plants via <i>Prevention</i> and <i>Eradication</i>	Students must be able to identify the most important methods that reduce the spread of weeds	3	6
Daily exam	Lecture with explanation in presentation	Study of Allelopathy and its harmful effects on nearby plants and soil	Students must be able to understand the process of antagonism and its negative effects	3	7
Exam	None	none	None	3	8

Daily exam	Lecture with explanation in presentation	Study of natural products similar to allelopathic substances	Students must be able to identify the types of compounds with antagonistic properties.	3	9
Daily exam	Lecture with explanation in presentation	Factors influencing the production of allelopathic substances	Students must be able to identify the main compounds exhibiting allelopathic properties	3	10
Daily exam	Lecture with explanation in presentation	Methods to reduce weed spread	Students must be able to identify the main factors affecting the production and accumulation of allelopathic substances in the soil	3	11
Daily exam	Lecture with explanation in presentation	Sustainability of pesticides in the soil	Students must be able to identify the types of means and methods by which weeds spread in the fields	3	12
Daily exam	Lecture with explanation in presentation	Points to consider when estimating pesticide levels in soil	Students must be able to recognize the presence of pesticides and their negative effects on the soil.	3	13

Daily exam	Lecture with explanation in presentation	Factors affecting pesticide persistence in soil	Students must be able to identify the main factors affecting the reduction of pesticide residues in the soil	3	14
11. Course Evaluation					
Grade (out of 100) is distributed based on tasks assigned to students such as daily preparation, quizzes, oral and written monthly exams, reports, etc.					
12. Learning and Teaching Resources					
<i>Weeds and Their Control Methods / Practical Section</i> By: Dr. Mohammed Hithal Kadhem Al-Baldawi & Dr. Mowafaq Abdul-			Required textbooks (methodology, if any)		
Agricultural Pest Control Guide – Plant Protection Research Division –			Main References (Sources)		
Scientific Journals / Reports			Recommended Supporting Resources (Scientific Journals, Reports, etc.)		
بغ			Electronic References and Websites		

Practical Course Description

1. Course Name:
practical Weed Biology / Practical
2. Course Code:
WEBI413
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
02/04/2026
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 / 4 units					
7. Course Administrator's Name (Mention All, If More Than One Name)					
Name: Miraje Mustafa Mohammed				Email: miraje.mohammed@uobasrah.edu.iq	
8. Course Objectives					
Course Objectives		• Identifying the vegetative characteristics and methods of reproduction of jungle plants, and learning about methods of pressing and drying plant specimens and types of jungle according to the growing season and their life cycle			
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	2hours	To be able to understand and assimilate scientific information and the ability to discriminate	Introduction to jungles	• Lecture with explanation and presentation	Oral Discussion and Questions
Second	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Classification of jungle plants	• Lecture with explanation and presentation	Quick Quiz Students identify, select, and classify a group of jungles
Third	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Phenotypic characteristics of the bush	• Lecture with explanation and presentation	Oral Discussion and Questions
Fourth	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Vegetative characteristics of the bush	Lecture with explanation and presentation	Discussion between students and the course instructor
Fifth	2 hours	None	Exam 1	None	None

Sixth	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Collecting and pressing botanical specimens of the jungle Characteristics of jungle plants	• Lecture with explanation and presentation	Field visit to a field to learn about jungles and collect samples
Seventh	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Plant density study	Lecture with explanation and presentation	Oral Discussion and Questions
Eighth	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Methods of studying vegetation	• Lecture with explanation and presentation	Oral Discussion and Questions
Ninth	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Sampling methods	• Lecture with explanation and presentation	Oral Discussion and Questions
Tenth	2 hours	To be able to understand and assimilate scientific information and the ability to discriminate	Weedicide spraying equipment	• Lecture with explanation and presentation	Report including the students' understanding of jungle life

Eleventh	2 hours	To be able to understand and assimilate scientific information	Types of sprays	• Lecture with explanat ion and presenta tion	Oral Discussion and Questions
Twelfth	2 hours	None	Exam 2	• None	None
Thirteenth	2 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)	The Jungle Book and methods of combating it - the practical part. Doctor Muhammad Hazal Kazem Al-Baldawi Muwaffaq Abdul Razzaq Suhail
Main References (Sources)	None.
Recommended Books and References (Scientific Journals, Reports...)	None.
Electronic References, Websites	None.

Theoretical Course Description

1. Course Name

(Medicinal Plants) - Fourth Stage - Department of Field Crops - College of Agriculture - University of Basra	
2. Course Code:	
DRPL412	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
02/05/2026	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 3units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Lamiaa Mahmood Al-Freeh	Email: lamiaa.salman@uobasrah.edu.iq
8. Course Objectives	
	• • Learn about the history of herbal medicine and its most important practitioners. • • Teach students the scientific aspects of medicinal plants. • • Teach students the basic aspects of active ingredients in medicinal plants. • • Teach students the basic aspects of medicinal plant cultivation. • • Teach students the basic concepts of establishing and managing medicinal plant farms. • • Teach students the important aspects of medicinal plant laboratories, including equipment and chemicals. • • Teach students about the safe and beneficial active ingredients, toxic substances, and beneficial substances with side effects.
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 learn about the history of medicinal plants and the most important practitioners in this field, as well as some of the economic	Historical overview and economic value of medicinal and stimulant plants	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be introduced to the methods of classifying medicinal plants and the similarities and differences between these methods, with examples.	Botanical and organic classification of medicinal and stimulant plants	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used production units
Third	2 hours	Students will be able to distinguish medicinal plants containing alkaloids, as well as the importance of alkaloids to humans and plants, and the structural formulas of important alkaloids in some	Alkaloid chemistry, importance and benefits of alkaloids, and classification of alkaloids	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions

Fourth	2 hours	Students will learn about the importance of glycosides, their structural formulas, their importance to humans and	Glucoside chemistry, importance and benefits of glycosides, classification of glycosides	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	Students will be able to identify the types of tannins and their importance to humans and animals	The importance and benefits of tannins and the classification of tannins	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2	First Semester			
Seventh	2 hours	The student will learn about the basic units responsible for the formation of volatile oils, the difference between volatile and aromatic oils, and some examples of volatile oils	Physical and chemical properties of essential oils, industrial uses of essential oils	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eighth	2 hours	The student will learn about the most important and easiest methods used to extract volatile oils, as well as the equipment and materials used in	Volatile oil extraction methods, distillation and solvent extraction	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions

Ninth	2 hours	The student will learn about the most important and easiest methods used to extract volatile oils, as well as the equipment and materials	Extraction by pressing, pricking, and enzymatic hydrolysis, high-performance liquid chromatography (HPLC)	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Tenth	2	Scientific trip.			
Eleventh	2 hours	Students will be able to identify the most important vitamins found in medicinal plants, their importance to humans and animals, their chemical composition, and the most important plants and plant families	Vitamins: Types, occurrence, and extraction methods	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Twelfth	2 hours	Students will be able to identify phenols, their types found in medicinal plants, their importance to humans and animals, their chemical composition, and the most important plants and plant families	Phenols: Types, composition, and medical importance	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions

Thirteenth	2 hours	Through this lecture, students will have learned about the most important oxidizing substances in some medicinal plants and their	Oxidants and antioxidants	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Fourteenth	2 hours	The student learns about cell death, its causes, benefits, and .harms	Apoptosis	• Theoretical lecture • Presentation • Group discussion - Video	Discussion and oral questions
Fifteenth	2 hours	Second semester 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. 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)	Al-Rawi, Ali, and H. L. Jakra Varti, 1964. Medicinal Plants in Iraq. Ministry of Agriculture and Irrigation. General Authority for Agricultural Research and Water Resources. Iraqi National Herbarium, Vol. 15, p. 109. Al-Rawi, Ali, 1988. Geographical Distribution of Wild Plants in Iraq. Ministry of Agriculture and Irrigation. General Authority for Agricultural Research and Water Resources. Iraqi National Herbarium, Vol. 232. Al-Rawi, Ali, 1988. Poisonous Plants in Iraq. Ministry of Agriculture. Vol. 138, p.
Recommended Books and References (Scientific Journals, Reports...)	Al-Shahat, Nasr Abu Zaid (1986). Medicinal Plants and Herbs. Dar Al-Bahar Publications - Dar and Library of Al-Hilal, Beirut, p. 496. Hussein, Fawzi Taha Qutb 0 1981. Medicinal Plants, Their Cultivation and Components. Dar Al-Marikh for Publishing, p. 356.
Electronic References, Websites	https://www.fao.org/fishery/ar

Course Description Form

1. Course Name:
Practical Drugs Plants
2. Course Code:
DRPL412
3. Semester / Year:
The first semester-fourth stage / 2025-2026
4. Description Preparation Date:

2/4/2026

5. Available Attendance Forms:

My presence in the jungle laboratory – full time

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

(2 practical hours) 3 units

. Course Administrator's Name (Mention All, If More Than One Name)7

Name: Sundus kamil jabber

Email: sundus.jabar@uobasrah.edu.iq

8. Course Objectives

Course Objectives

- Through the Medicinal Plants course, the importance of medicinal and stimulant drug plants in treating diseases and pathogens and how they differ from chemical drugs is learned
- The course is also interested in studying the environmental factors affecting their production and how to diagnose the active compounds in these plants
- The most important chemical groups and active compounds in the most commonly used plants as drugs are mentioned
- The importance of drug plants and how to preserve them
- Knowing the types and benefits of medicinal plants and ways to use them
- How to propagate, maintain and improve these plants
- Distinguish between medicinal plants and ways to use them
- Human relationship with medicinal plants
- Identifying the areas and when they are planted
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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.
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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	Identify the factors that affect medicinal plants, including light, lighting intensity, temperature, and their effect on medicinal plants	Display Screen	Daily and weekly test
2	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Presentation of a seminar	Display Screen	Daily and weekly test

3	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Geological climatic factors, including water, the effect of increased and decreased humidity, and how they affect medicinal plants	Display Screen	Daily and weekly test
4	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Geological factors/soil and its natural composition - aeration - salts in the soil - soil acidity	Display Screen	Daily and weekly test
5	2		Exam1		

6	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Industrial factors: Agricultural factors include irrigation, fertilization, reproduction, cultivation methods, and the distance between plants. Methods and times of harvesting the crop	Display Screen	Daily and weekly test
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7	2	Knowledge and understanding, brainstorming and mental skills, professional	Field visit to the field	Display Screen	Daily and weekly test
8	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Genetic factors/mutations/genetic duplication/hybridization	Display Screen	Daily and weekly test

9	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Preparing medicinal plants for marketing	Display Screen	Daily and weekly test
10	3	Scientific trip.			
11	2	The student will learn about the most important and easiest methods used to extract	Volatile oil extraction methods, distillation and solvent extraction	The student will learn about the most important and easiest	Daily and weekly test
12	2	The student will learn	Extraction by pressing, pricking, and enzymatic hydrolysis, high-	The student	Daily and weekly test
13	2	Students will be able to identify the	Vitamins: Types, occurrence, and extraction methods		Daily and weekly test

14	2	Students will be able to identify	Phenols: Types, composition, and medical importance		Daily and weekly test
15	2	Exam2			
11. Course Evaluation					
The grade distribution is 20 grades for theoretical, distributed as follows: 25 monthly exams, 2 attendance, and 3 exams.					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)					
Main References (Sources)			No Al-Shahat, Nasr Abu Zaid (1986). Medicinal Plants and Herbs. Dar Al-Bahar Publications - Dar and Library of Al-Hilal, Beirut, p. 496. Hussein, Fawzi Taha Qutb 0 1981. Medicinal Plants, Their Cultivation and Components. Dar		
Recommended Books and References (Scientific Journals, Reports...)					
Electronic References, Websites			https://www.fao.org/fishery/ar		

Theoretical Course Description

1. Course Name:	
(Theoretical plant physiology) - Fourth Stage - Department of Field Crops - College of Agriculture - University of Basrah	
2. Course Code:	
PLPH420	
3. Semester / Year:	
Second Semester / 2025-2026	

4. Description Preparation Date:					
02/5/2026					
5. Available Attendance Forms:					
My presence in Hall 2- full time					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours per week / 4 units					
7. Course Administrator's Name (Mention All, If More Than One Name)					
:Name		Dr.Abdulameer Rheem Obaid			
		Email: : abdulameer.obaid@uobasrah.edu.iq			
8. Course Objectives					
Course Objectives		• Learn about plant physiology and related sciences • Identify the cell, its parts, and the functions of each part • Study methods for preparing solutions • Study all the physiological activities that occur in plants • Study environmental stresses and their effect on plants			
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	3hours	To be able to understand and assimilate	Cell Plant	• Lecture with explanation in	Lecture with explanation in

Second	3 hours	To be able to understand and assimilate scientific information	water potenatial of the cell plant water Absorption	• Lecture with explanat ion	Display + Blackboard
Third	3 hours	To be able to understand and assimilate scientific information and the ability to	Ascent of water in the xylem tissuse mechanisms of water translocation	• Lecture with explanat ion in presenta tion	Display + Blackboard
Fourth	3 hours	To be able to understand and assimilate scientific information and the	Stomata stracture Factors effecting stomatal movment	• Lecture with explanat ion in presenta tion	Display + Blackboard
Fifth	3 hours	To be able to understand and assimilate	Photosynthe sis Photosynthetic pigments	Lecture with explanation in presentation	Display + Blackboard
Sixth	3 hours	To be able to understand and assimilate	Exam1	Lecture with explanation in presentation	Display + Blackboard
Seventh	3 hours	To be able to understand and assimilate	Reactoin of photosynthesis Light reaction Dark reaction	Lecture with explanation in presentation	Display + Blackboard
Eighth	3 hours	To be able to understand and assimilate	C4 pathway	Lecture with explanation in presentation	Display + Blackboard
Ninth	3 hours	To be able to understand and assimilate	Carssulacean Acid Metabolism (CAM)	Lecture with explanation in presentation	Display + Blackboard
Tenth	3 hours	To be able to understand and assimilate	plant Regulator	Lecture with explanation in presentation	Display + Blackboard
Eleventh	3 hours	To be able to understand and assimilate	Plant Growth and development	Lecture with explanation in presentation	Display + Blackboard

Twelfth	3 hours	To be able to understand and assimilate	Control of plant growth	Lecture with explanation in presentation	Display + Blackboard
Thirteenth	3 hours	To be able to understand and assimilate	Stress environment	Lecture with explanation in presentation	Display + Blackboard
Fourteenth	3 hours		Exam2		

11. Course Evaluation

The grade distribution is 50/(30) grades for theoretical, distributed as follows: 25 monthly exams, 2 attendance, and 3 exams.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Principles of plant physiology - Basalam Al-Taha
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Practical Course Description

1. Course Name:
Practical physiological plant
2. Course Code:

PLPH420	
3. Semester / Year:	
First semester (Field Crops Section) The fourth stage 2024/2025	
4. Description Date:	
2-5-2026	
5. Available Attendance Forms:	
Attending college within practical Classification laboratory- full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 units :2 hours	
8. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Sabreen Hazim Abdulwahed Email: Sabreen.hazim@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Definition of crop physiology, the importance of studying it, the mechanism of water absorption, and the division of materials in terms of their relationship to water.
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
First	2hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Introduction to the importance of plant and purpose of its study	Lecture with explanation and presentation.	Display Screen
Second	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Some physical phenomena associated with water	Lecture with explanation and presentation	Display Screen
Third	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Water absorption	Lecture with explanation and presentation	Display Screen
Fourth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and	The solution	Lecture with explanation and presentation	Display Screen
Fifth	2 hours		Exam 1	Lecture with explanation and presentation	Display Screen

Sixth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Division materials in terms of water relationship Plant cell	Lecture with explanation and presentation	Display Screen
Seventh	2 hours	Knowledge and understanding, brainstorming and mental skills,	Plant growth regulators	Lecture with explanation and	Display Screen
Eighth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Gibberellins	Lecture with explanation and presentation	Display Screen
Ninth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Photosynthesis	Lecture with explanation and presentation	Display Screen
Tenth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Reactive Oxygen Species ROS	Lecture with explanation and presentation	Display Screen
Eleventh	2 hours	Knowledge and understanding, brainstorming and mental skills,	The importance of plant mineral elements	Lecture with explanation and	Display Screen

Twelfth	2 hours	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Growth Analysis	Lecture with explanation and presentation	Display Screen
Thirteenth	2 hours		Exam 2		

11. Course Evaluation

The grade distribution is 20 grades for theoretical, distributed as follows: 25 monthly exams, 2 attendance, and 3 exams.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	No
Main References (Sources)	. The book “Basics of Plant Physiology” by Professor Dr. Heshmat Suleiman Ahmed Al-Desouki
Recommended Books and References (Scientific Journals, Reports...)	Field crop physiology book written by Dr. Ayman Al-Shahada Al-Awda Dr. Mamoun Khaiti and Dr. Rima Rabah
Electronic References, Websites	No

Course Description Form

1. Course Name

Weed Control					
2. Course Code					
WECO418					
3. Semester/Year					
Fourth stage / Second Semester					
4. Date of preparation of this description					
27 / 4 / 2026					
5. Available attendance forms					
In-person					
6. Number of credit hours (total) / number of units (total)					
3 Hours = 4 Units					
7. Course administrator's name (if more than one name is mentioned)					
Name: Kadhim Kutami Jaber Email: kadham.gaber@uobasrah.edu.iq					
8. Course Objectives					
☐ Study and identification of weeds ☐ Explaining weed characteristics and methods of weed control ☐ Study of herbicides and their effectiveness against weeds ☐ Study of herbicide residues in the soil and their harmful effects				Course Objectives	
9. Teaching and learning strategies					
• 13 in-person lectures • Includes two monthly exams and daily quizzes				Strategy	
10. Course Structure					
Evaluation method	Learning method	Unit or subject name	Required Learning	Hours	Week

Daily exam	Lecture with explanation in presentation	A brief history of the study of the weeds	Students' knowledge of the historical background of these weeds.	3	1
Daily exam	Lecture with explanation in presentation	Definition of weeds plants and their secondary benefits	Students will be able to identify the harms and benefits of these plants.	3	2
Daily exam	Lecture with explanation in presentation	weed propagation methods	Students will be able to understand weed reproduction and distinguish between weeds and economic crops	3	3
Daily exam	Lecture with explanation in presentation	Dividing weed plants	Students will be able to understand how these plants are classified	3	4
Daily exam	Lecture with explanation in presentation	Losses caused by the weeds	Students will have knowledge of the losses caused by weeds	3	5
Daily exam	Lecture with explanation in presentation	Characteristics of weeds plants	Students' knowledge of weed characteristics and comparison with those of other plants	3	6

Daily exam	Lecture with explanation in presentation	weed plant propagation	Students will be able to understand the methods and patterns of the spread of these plants	3	7
Daily exam	Lecture with explanation in presentation	Preventive measures that reduce the spread of weeds plants	Students will be able to identify the key preventive measures to limit the spread of weeds	3	8
Daily exam	Lecture with explanation in presentation	Mechanical control methods	Students' knowledge of the types of mechanical methods used for weed control in Iraq	3	9
Daily exam	Lecture with explanation in presentation	Biological control methods	Students' knowledge of the types of biological methods used for weed control in Iraq	3	10
Daily exam	Lecture with explanation in presentation	Chemical control methods	Students will be able to identify the various chemical methods utilized for weed control in Iraq, along with the herbicides commonly used	3	11
Daily exam	Lecture with explanation in presentation	Chemical groups of weeds plants	Students will be able to identify the types of these chemical groups and their	3	12

			properties		
Daily exam	Lecture with explanation in presentation	Weeds Herbicide selectivity	Students will be able to distinguish the effectiveness of herbicides and their role	3	13
Daily exam	Lecture with explanation in presentation	Herbicide residues and their impact on soil	Students will have knowledge of the harmful effects of pesticide residues in the soil	3	14
Exam	none	None	none	3	15
Practical part					
Evaluation method	Learning methods	Practical and field lectures	Required Learning Outcomes	Hours	Week
Daily test	Detailed explanation using special tools	Demonstration on weed sample collection and preservation	General understanding of weeds	3	1
Daily exam	A lecture with explanation in a presentation	Explanation of differences among weed families	Identification of the different classifications of weeds	3	2
Daily exam	Lecture with presentation of family models	Study of annual poaceae weed families	Weeds of the Poaceae family (Grasses)	3	3
Daily exam	Lecture with presentation of family models	Study of perennial fabaceae weed families	Weeds of the Poaceae family (Grasses)	3	4

Field Test	Collecting and identifying bush models	Field tour in Agriculture College fields: weed collection and identification	Weeds of the Fabaceae family (Legumes)	3	5
Daily exam	Lecture with presentation of family models	Study of annual fabaceae weed families	Weeds of the Brassicaceae family (Cruciferous family)	3	6
	Test using bush models collected	First month exam	Weeds of the Plantaginaceae family	3	7
Daily exam	Collecting and identifying bush models	Study of perennial broadleaf weed families	None	3	8
Field Test	Collecting and identifying bush models	Field tour in Agriculture College fields: weed collection and identification	Weeds of the Rubiaceae and Cyperaceae families	3	9
Daily exam	Lecture with presentation of family models	Study of composite weed families	Weeds of the Rubiaceae and Lamiaceae families	3	10
Field Test	Collecting and identifying bush models	Field tour in Agriculture College fields: weed collection and identification	Weeds of the Cyperaceae and Verbenaceae families	3	11
Field Test	Collecting and identifying bush models	Study of different weed families widespread in the southern region	Weeds of the Asclepiadaceae and Solanaceae families	3	12
Field Test	Collecting and identifying bush models	Field tour in Agriculture College fields: weed collection and identification	Weeds of the Asteraceae, Oxalidaceae, Primulaceae, and Geraniaceae families	3	13
None	None	Second month exam	None	3	14

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.	
12. Learning and Teaching Resources	
Jungle and methods of combating them / practical part Dr. Muhammad Hathal Kazem Al-Baldawi – Dr. Abdul Razzaq Suhail Al-Naqib	Required textbooks (methodology, if any)
Agricultural Pest Control Guide Prevention Research Department –	Key references (sources)
No	Recommended supporting books and references (scientific journals, reports...)
No	Electronic references, websites

.1Course name
(Pasture Management) - Fourth Stage - Department of Field Crops - College of Agriculture - University of Basra
.2Course code
PAMA417
.3Semester/Year
Chapter Two(2026-2025-)
4. Date of preparation of this description
5,4, 2026
5. Available Attendance Forms
In-person in Crops Hall No. 2
6. Number of Study Hours (Total) / Number of Units (Total)
2hours- 3 units
7. Name of Course Supervisor (if more than one name is provided)
Ph D. Dr. Lamiaa Mahmood Salman Email: lamiaa.salman@uobasrah.edu.iq
8. Course Objectives

Course Objectives	•Understand what natural pastures mean and how they differ from domesticated pastures. •Understand the types of pastures prevalent worldwide. •Identify the duties and qualifications of a pasture manager. •Understand shrub grazing and how it differs from grass grazing. •Identify grazing areas globally and in Iraq. •The importance of pastures. •Factors affecting pastures and the impact of these factors on pastures. •Understand common and global grazing systems. • Identify areas with harmful weeds.
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.9Teaching 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.
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.10Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	Hours	week
Oral questions with discussion	Lecture with explanation and presentation	Pastures and their types	Introducing students to the types of pastures spread in Iraq and the world and the percentage of natural grazing areas in the world.	2	1
Oral questions with discussion	Lecture with explanation and presentation	The economic importance of pastures	Introducing the student to the economic aspects of natural pastures and forms of natural grazing in a group of countries around the world.	2	2

Questions with a surprise exam	Lecture with explanation and presentation	Pastoral vegetation and its basic components	Introducing the student to the components of the pasture, including plant species, their shapes, their proportions in the pasture, and the factors affecting this proportion.	2	3
Oral questions with illustrative forms	Lecture with explanation and presentation	Environmental factors and natural pastures	Introducing the student to the environmental factors that affect natural and domesticated pastures and the type of impact, whether negative or positive.	2	4
Oral questions and discussion	Lecture with explanation and presentation	Vegetation and pasture areas of the world	Introducing the student to the most important natural grazing areas in the world and the types of plants that are widespread throughout the world.	2	5
		First semester exam		2	6
Questions with a surprise exam	Lecture with explanation and presentation	Vegetation and grazing areas in Iraq	Introducing the student to the types of plants, their distribution areas, and their characteristics in Iraq.	2	7
Oral questions with illustrative forms	Lecture with explanation and presentation	Pasture and its impact	Introducing the student to the pros and cons of grazing and overgrazing	2	8
-----	-----	Scientific trip	-----	2	9

Oral questions and discussion	Lecture with explanation and presentation	Types of grazing systems	Part One: Introducing the student to the types of grazing, what each type means, and what are the positives and negatives of each type.	2	10
Questions with a surprise exam	Lecture with explanation and presentation	Types of grazing systems	Part Two: Introducing the student to the types of grazing, what each type means, and what are the positives and negatives of each type.	2	11
Oral questions with illustrative forms	Lecture with explanation and presentation	Sources of exploitation of pastoral plants	Introducing the student to the best way to utilize pasture plants	2	12
Oral questions and discussion	Lecture with explanation and presentation	Pasture management and maintenance	Introducing the student to how to manage pastures in the best way and protect them from all forms of destruction that affect them.	2	13
Questions with a surprise exam	Lecture with explanation and presentation	Harmful weeds in natural pastures	Introducing the student to the most important harmful plants that may be present in pastures, the nature of the physical and chemical damage, and the effect of these plants and their impact on pasture plants.	2	14

		Second semester exam		2	15
.11Course 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. 5points for attendance, participation, and answering oral questions 5points for reports and projects 10points for the first monthly exam 10points for the second monthly exam 30points for the final exam Total: 60 points 40points for the practical part					
.12Learning and teaching resources					
No textbook		Required textbooks (methodology, if available)			
Online lectures		Main references (sources)			
None		Recommended supporting books and references (scientific journals, reports, etc.)			
None		Electronic references, websites			

Practical Course Description

1. Course Name:
Pasture management/ Practical
2. Course Code:
PAMA417
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
02/04/2026
5. Available Attendance Forms:
Attendance in the laboratory and field visits

6. Number of Credit Hours (Total) / Number of Units (Total)					
3 units- 2 hours					
7. Course Administrator's Name (Mention All, If More Than One Name)					
Name: Miraje Mustafa Mohammed				Email: miraje.mohammed@uobasrah.edu.iq	
8. Course Objectives					
Course Objectives		• Teach students the proper administrative aspects of establishing and managing pastures. • Teach students the basic aspects of designing reliable pastures for animal nutrition. • Teach students the basic concepts of establishing and managing pastures, such as selecting plants that are suitable for climatic conditions and palatable to animals. • Teach students how to prevent pasture degradation and methods for rehabilitating pastures in the event of overgrazing and other conditions. • Teach students the nature and types of			
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	2 hours	Students will be able to identify the basic aspects of pasture management and the most important plants grown in them.	. Vegetation components in pasture lands Introduction to pastures and their types, identifying the plant species that cover pastures, and explaining	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Second	2 hours	Students will be able to distinguish between quantitative and qualitative measures of vegetation in a pasture based on the density and chemical composition	Technical methods for studying pasture plants (clarifying the qualitative and quantitative criteria for pasture plants and identifying the chemical composition of pasture plants).	• Practical lecture • Presentation • Group discussion	Quick test Students identify the appropriate type for a group of production units mentioned in the questions
Third	2 hours	Students will be able to estimate and calculate the exploitation criterion according to a mathematical equation.	Natural pasture exploitation (explaining how to calculate pasture exploitation standards using a mathematical equation).	• Practical lecture • Presentation • Group discussion	Solving practical problems
Fourth	2 hours	Students will be able to design and establish an integrated pasture according to sound management principles.	The most important rules followed in pasture management (explaining the most important factors, methods, and appropriate periods for	• Explanation by the course instructor • Explanation by the pasture management	Discussion between students, their instructor, or the pasture management.

Fifth	2 hours	Students will be able to identify injured animals and how to handle and treat them.	Bloat and poisoning of pasture animals (identifying the causes of poisoning and bloat in pasture animals, and explaining the methods and means to reduce, limit, and treat them)	• Practical lecture • Examination of samples of injured animals	A field visit to a pasture to observe the condition of the pasture and the animals.
Sixth	2 hours	None	First month exam	• None	None
Seventh	2 hours	Students will be able to identify positive and negative influences on forage quality in pasture.	Qualitative Pasture Evaluation (detailed explanation of the factors affecting forage quality)	None	None
Eighth	2 hours	Students will be able to identify the condition of pasture and how to improve it.	Pasture Condition and Trend (explaining what is meant by pasture condition, identifying pasture condition categories, and identifying criteria for judging)	• Practical lecture • Presentation • Video	Discussion and oral questions

Ninth	2 hours	Students will be able to identify the basics of pasture classification	Pasture Condition Classification Methods (knowing and explaining the methods that form the basis for classifying pastures)	• Practical lecture • Presentation • Video	Discussion and oral questions
Tenth	2 hours	Students will be able to identify livestock's water needs and how to provide them with water sources.	Livestock Watering (detailed explanation of the factors that determine livestock water requirements)	• Practical lecture • Presentation • Video	A report that includes everything the students have learned from the pasture management.
Eleventh	2 hours	Students will be able to identify the basic aspects of animal behavioral systems in pastures.	Animal Behavior in Pasture (explaining the relationship between pasture and animals and identifying the factors that affect animal	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	2 hours	Students will be able to identify the basics of pasture degradation and the basic methods for improving	Pasture Reforestation (Identifying the causes of vegetation deterioration and addressing the most important	• Practical lecture • Presentation • Video	Assigning students to transport a group of live fish by different means
Thirteenth	2 hours	None	Second Month Exam	• None	None
Fourteenth	2 hours	Students will be able to identify the basics of	Pasture Classification Methods (Explaining	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 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)	Natural Rangeland Management (Dr. Ramadan Ahmed Al-Nakraiti and Dr.
Main References (Sources)	None.
Recommended Books and References (Scientific Journals, Reports...)	None.
Electronic References, Websites	Lectures from websites

Course Description Form

1. Course Name:
Environmental stress
2. Course Code:
ENST424
3. Semester / Year: First semester
2025-2026
4. Description Preparation Date:
02 /3/ 2026
5. Available Attendance Forms: Available at the hall
Attending college within practical Classification laboratory
6. Number of Credit Hours (Total) / Number of Units (Total):
Number of Credit Hours is 3 hours /4 units
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Asst. prof. Dr. Mohanad abdulhussien Abbood alsulaiman
mohanad.alsulaiman@uobasrah.edu.iq

8. Course Objectives

Course Objectives

- Introducing the student to the science of stress tolerance in plant and its importance
 - stress types in field conditions
- Mechanisms of stress tolerance in plants

9. Teaching and Learning Strategies

Strategy

- Introducing the student to the science of stress tolerance in plants of and its importance
 - stress tolerance of plants mechanisms
- stress tolerance of plants methods and types (direct and indirect).
 - The most important devices used to measure stress intensity
- How to use the leveling device and theodolite

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and	Introduction to abiotic stresses, which include: high temperature intensity, low temperature intensity, water stress, salt stress, and elemental stress.	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices	Evaluation by quick Quiz at each new lecture
2	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and	High heat tension, high heat tolerance, nature of damage caused by high heat, and means of protecting plants from high temperature damage	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices	Evaluation by quick Quiz at each new lecture

3	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Physiological basis for high temperature tolerance, calcium and its relationship to heat intensity, effect of heat on plant life cycle, plants adaptation and resistance to high temperature	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
4	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Low temperature stress, cold adaptation, water stress, its concept, levels, methods of determining it	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	Evaluation by quick Quiz at each new lecture
5	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Methods of creating water stress in plants, classification of plants according to their resistance to drought, methods of adaptation of plants to drought resistance	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the	Evaluation by quick Quiz at each new lecture

6	3	The student should be able to understand and comprehend the theoretical material. The student pass daily and monthly exams	Effects of water stress, seed germination, photosynthesis, carbohydrates	Professor's explanation of the theoretical subject using shapes and illustrations arranged using PowerPoint program. Watch and use devices and tools in the practical lesson	First exam
7	3	The student should be able to understand and	The effect of tension on nitrogen fixation, water stress and its relationship to the formation of	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture
8	3	The student should be able to understand and	Oxidative stress, salts and their effect on plants (Introduction)	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture
9	3	The student should be able to understand and	Sources of salt, measurements of salt, damages of high salinity, salt-loving plants and	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture
10	3	The student should be able to understand and	Definition of salt-loving plants, the physiological basis of salinity tolerance in plants	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture
11	3	The student should be able to understand and	The effects of salt, plants resistance to salinity, methods of salinity resistance	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture

12	3	The student should be able to understand and	Variation of plants in their resistance to salinity, salt stress and the role of proline, salinity tolerance	Professor's explanation of the theoretical subject using shapes and	Evaluation by quick Quiz at each new lecture
13	3	The student should be able to understand and	Salinity tolerance in forage crops, sodium and salt stress, calcium and salt stress	Professor's explanation of the theoretical subject using shapes and	Second exam
11. Course Evaluation					
The degree of 100 will distributed according to the tasks assigned to the student, such as daily preparation, daily oral exams, monthly exams, and reports.					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)			❖ الماء في حياة النبات / تأليف الدكتور رياض عبد اللطيف احمد ❖ فسلجة الحاصلات الزراعية ونموها تحت الظروف الجافة/ تأليف رياض عبد اللطيف احمد		
Main References (Sources)			❖ الماء في حياة النبات / تأليف الدكتور رياض عبد اللطيف احمد ❖ فسلجة الحاصلات الزراعية ونموها تحت الظروف الجافة/ تأليف رياض عبد اللطيف احمد		
Recommended Books and References (Scientific Journals, Reports...)			1- PHYSIOLOGY AND MOLECULAR BIOLOGY OF STRESS TOLERANCE IN PLANTS// Edited by: K.V. MADHAVA RAO; A.S. RAGHADeVENDRA/ University of Hyderabad, India 2- RESPONSE OF PLANTS TO ENVIRONEMENTAL STRESSES		
Electronic References, Websites			https://link.springer.com/book/10.1007/978-3-662-07745-0		

Course Description Form

1. Course Name:
Environmental stress practical
2. Course Code:
ENST424
3. Semester / Year:
Second semester \ fourth stage
4. Description Preparation Date:
7-5-2026
5. Available Attendance Forms:
Attending full time

6. Number of Credit Hours (Total) / Number of Units (Total)						
4 units – 3 hours						
7. Course Administrator's Name (Mention All, If More Than One Name)						
Name: Wafaa A .Ahmed			Email: wafa.ahmed@uobasrah.edu.iq			
8. Course Objectives						
Course Objectives		Identify the environmental stress to which the plant is exposed The most important symptoms of a plant when exposed to environmental stress				
9. Teaching and Learning Strategies						
Strategy	In-person lectures for 15 weeks, including two monthly exams and daily exams					
10. Course Structure						
Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method		Evaluation Method
2-1	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	A general introduction to environmental stress	Lecture with explanation presentation	daily exam	
4-3	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills,	How to determine salt concentrations	Lecture with explanation presentation	daily exam	

		and general skills			
5	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Salt stress	Lecture with explanation presentation	daily exam
6	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	An experiment on salt stress	Lecture with explanation presentation	daily exam
7	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Heat stress - high temperature - lowering the temperature	Lecture with explanation presentation	daily exam
8	2		Monthly exam		
9	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Bulk density stress	Lecture with explanation presentation	daily exam

10	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Experience the Bulk density stress	Lecture with explanation presentation	daily exam
11	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Moisture stress - soil water stress	Lecture with explanation presentation	daily exam
12	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Plant density stress	Lecture with explanation presentation	daily exam
13	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Stressing nutrients increases and decreases concentration	Lecture with explanation presentation	daily exam

14	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Experience nutritional stress	Lecture with explanation presentation	daily exam
15	2		Exam		

11. Course Evaluation

The final exam consists of 20 monthly exams, 10 for each monthly exam, 5 daily exams, and 5 reports

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	كتاب مبادي التربة 1989 – عبدالله العاني
None	كارسون سبوزيتو. 2012. كيمياء الترب. ترجمة د. نور الدين شوقي علي و د. شفيق جلاب سالم
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Course Description Form

1. Course Name :Plant Breeding Practical-
<i>Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah</i>

2. Course Code:	
PLBR414	
3. Semester / Year:	
2025-2026	
4. Description Preparation Date:	
1-6-2026	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 units – 2 hours	
7. Course Administrator's Name	
Name: Rawafid Hadi Al-obaidi	Email: rawafid.qasim: @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	2	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	2	The floral system and its relationship to pedagogy and calculating the	The student should be familiar with floral systems and their	Lecture with explanation and presentation	Oral discussion and questions
3	2	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	2	Learn about the floral system of cross-pollinated crops	The student should be able to understand and distinguish	The student should be able to benefit from	Scientific visit
5	2	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	2	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	2	None	First-month exam	None	none
8	2	Field identification of vegetatively pollinated crops	The student should be able to distinguish between	Scientific visit	Discussion between students and between
9	2	Practical examples of hybrid vigor and indoor breeding in self-pollinated and	The student should be able to solve problems related to hybrid	Lecture with explanation, presentation and problem	Oral discussion in the classroom
10	2	A field visit to learn about fodder and vegetatively reproductive plants	The student should be familiar with the plant species present in	Scientific visit	Discussion between students and between

11	2	Using backcrossing to transfer resistance traits and field visits to	The student should be able to choose the appropriate	Practical application in the field	Assign students to feminize some
12	2	Inheritance accounts of all kinds	The student should be able to calculate the retention factor	Lecture with explanation and presentation	Oral discussion and questions
13	2	None	Second month exam	none	None
14	2	Identify the reasons for different heritability values	The student should be able to understand the types of	Lecture with explanation and presentation	Oral discussion and questions
15	2	Genetic mutations, their types and benefits of using them in breeding	The student should be familiar with the types of genetic mutations	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...)			No		
Electronic references, websites			Some research and articles on plant breeding and improvement		

Practical Course Description

1. Course Name: -

Practical Desert Land Cultivation

2. Course Code:	
DLCU419	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
2026/51/2	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 units – 2 hours	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Anhar.jaaz@uobasrah.edu.iq Name: Anhar jaaz	
8. Course Objectives	
Course Objectives	Ability to work in the agricultural sector and in the field of field crops • Increasing the spirit of competition among students for academic excellence and obtaining
9. Teaching and Learning Strategies	
Strategy	-Working to graduate students with concepts in the field of field management in a good manner- -Working to graduate students familiar with sciences related to crop management, such as plant physiology, irrigation, and puncturing. - Introducing students to the types and nature of their growth, methods of propagation and reproduction, and the characteristics of their growth and harvest. - Introducing students to the devices used in laboratory and field crop management. -Introducing the student to the nature of dealing with seeds used in agriculture in the field of crop management. - Introducing the student to dealing with soil types that suffer from salinity or drought

10. Course Structure					
Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	To be able to understand and assimilate scientific information and the ability to discriminate	The concept of desertification - its types - cases of desertification in Iraq	theoretical and practical power point lectures Discussions,	Daily and monthly tests
2	2	To be able to understand and assimilate scientific	Factors affecting desertification - first, human causes	theoretical and practical power point lectures	Daily and monthly tests
3	2	To be able to understand and assimilate scientific information and the ability to discriminate	Factors affecting desertification - secondary, natural causes Temperature - wind - atmospheric pressure – rain	theoretical and practical power point lectures Discussions,	Daily and monthly tests
4	2	To be able to understand and assimilate scientific information and the	Natural causes - B - wind erosion - salinity of soil and water	theoretical and practical power point lectures Discussions,	Daily and monthly tests
5	2	To be able to understand and assimilate scientific information and the ability to discriminate	manifestations of desertification	theoretical and practical power point lectures Discussions,	Daily and monthly tests

6	2	None	First monthly exam	None	None
7	2	None	a visit to a saline area, collection and identification of its plants	None	None
8	2	To be able to understand and assimilate scientific information and the ability to discriminate	Desertification results	theoretical and practical power point lectures Discussions	Daily and monthly tests
9	2	To be able to understand and assimilate scientific information and the ability to discriminate	Distribution of desertification in Iraq	theoretical and practical power point lectures Discussions,	Daily and monthly tests
10	2	To be able to understand and assimilate scientific information and the ability to discriminate	Anti-desertification technology	theoretical and practical power point lectures Discussions,	Daily and monthly tests
11	2	To be able to understand and assimilate scientific	Windbreaks - their importance - how they work	theoretical and practical power point lectures	Daily and monthly tests

12	2	To be able to understand and assimilate scientific information and the ability to discriminate	About an oil crop that can be grown in the region (Jojoba)	theoretical and practical power point lectures Discussions,	Daily and monthly tests
13	2	None	First monthly exam	None	None
14	2	None	A scientific visit to one of the areas in western Basra (Al-Zubair) to learn	theoretical and practical power point lectures	
15	2	None	General review of the material	None	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)			No		

Main References (Sources)	1- Scientific foundations for managing, producing and improving field crops. Hussein Al-Muaini and Muhammad Awaid Ghadeer Al-Obaidi. College of Agriculture - University. Anbar, 2018 2- Principles of field crop production: Muhammad Hazal Kazem Al-Baldawi, Aladdin Abdul Majeed Al-Jubouri, and Muwaffaq Abdul Razzaq Suhail Al-Naqeeb. College of Agriculture - University of Baghdad-2014
Recommended Books and References (Scientific Journals,	No
Electronic References, Websites	No

Course Description Form

1. Course Name:
Desert Land Cultivation – fourth stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
DLCU419
3. Semester / Year:
Second semester-fourth stage2025-2026
4. Description Preparation Date:
2-5-2026
5. Available Attendance Forms:
In presence- full time

. Number of Credit Hours (Total) / Number of Units (Total):					
4 unit – 3 hours					
. Course Administrator’s Name 7					
Khawla Dawood Gatie khawla.dawood@uobasrah.edu.iq					
8. Course Objectives					
Course Objectives			-An 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		
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	To be able to understand and assimilate scientific information and the ability to discriminate	- Desert Encroachment - Deforestation, Desertification, and Overgrazing - Desertification Patterns -	a lecture with an explanation, a presentation,	Question and discussion

2	3	To be able to understand and assimilate scientific information and the	Causes of Desertification - Natural Causes - Human Causes	a lecture with an explanation, a	Question and discussion
3	3	To be able to understand and assimilate scientific	Differences between Deserts and Desertification	a lecture with an explanation,	Question and discussion
4	3	To be able to understand and assimilate scientific information and the ability to discriminate	Desertification as an Environmental Concept - Impact of Dust and Sand Dunes Pollution and Environmental Awareness -	a lecture with an explanation, a presentation,	Question and discussion
5	3	To be able to understand and assimilate scientific information and the ability to discriminate	Climate Change Leading to Desertification	a lecture with an explanation, a presentation,	Question and discussion
6	3	To be able to understand and assimilate scientific information and the ability to discriminate	Other Dimensions of the Desertification Issue - Impact of Desertification on Biodiversity and	a lecture with an explanation, a presentation,	Question and discussion
7	3		First-month exam		

8	3	To be able to understand and assimilate scientific information and the ability to	Global Warming - Major Greenhouse Gases - Consequences of Global Warming	a lecture with an explanation, a presentation,	Question and discussion
9	3	To be able to understand and assimilate scientific information and the	Drought - Arid Lands - Causes of Drought	a lecture with an explanation, a	Question and discussion
10	3		General Characteristics of Plants in Arid Regions - Plant Adaptation	a lecture with an explanation,	Question and discussion
11	3	To be able to understand and assimilate scientific	Examples of Drought-Adapted Species	a lecture with an explanation,	Question and discussion
12	3		Monthly Exam		
13	3	To be able to understand and assimilate scientific information and the ability to discriminate	Water Stress and Plant Resistance to Drought - Salts and Their Impact on Plants - Sources of Salinity	a lecture with an explanation, a presentation,	Question and discussion
14	3	To be able to understand and assimilate scientific information and the ability to discriminate	- Desert Encroachment - Deforestation, Desertification, and Overgrazing - Desertification Patterns -	a lecture with an explanation, a presentation,	Question and discussion

15	3	To be able to understand and assimilate scientific information and the ability to discriminate	Causes of Desertification - Natural Causes - Human Causes - Differences between Deserts and Desertification	a lecture with an explanation, a presentation,	Question and discussion
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11. Course Evaluation

The grade distribution is 50/(30) grades for theoretical, distributed as follows: 25 monthly exams, 2 attendance, and 3 exams.

12. Learning and Teaching Sources

Required textbooks (methodology, if any)	Several Research Studies Related to Desertification
Main references (sources)	Biogeology of Desert Lands Cultivation of Desert Lands
Recommended supporting books and references (scientific journals, reports...)	Multiple Sources on Desertification and Crops Grown in Arid Regions
Electronic references, websites	Many resources

Theoretical Course Description

1. Course Name:
Plant Breeding / Theoretical
2. Course Code:
PLBR414

3. Semester / Year:					
Second Semester / 2024-2025					
4. Description Preparation Date:					
02/05/2026					
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	Unit or Subject Name	Learning Method	Evaluation Method

First	2 hours	Students will be able to identify the basic aspects of plant	Definition of plant breeding - Historical overview -	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Students will be able to identify the methods of reproduction in plants, the types of pollination in plants, and the factors that encourage self- and cross-pollination.	Methods of reproduction in plants - Types of pollination in plants - Factors that encourage self-pollination - cross-pollination	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 hours	Students will be able to identify variations and their relationship to plant growth, what types of variations are, understand sterility and incompatibility, and ways to overcome self-incompatibility	Variations and their relationship to plant growth - Types of variations - Sterility and incompatibility - Means of overcoming self-incompatibility	• Theoretical lecture • Presentation • Group discussion •	Discussion and oral questions
Fourth	2 hours	Students will be able to know what male infertility is, 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	Genetic homology - its dangers - chromosome	• 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	• 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	Adaptation - its types - selection - its types - pure breed - benefits	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Ninth	2 hours	Students will be able to identify the difference between self-	Comparison of self-pollinated and cross-pollinated crops	• 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	• 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	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Twelfth	2 hours	Methods of breeding vegetative propagated	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 types and the ways in which	• Theoretical lecture • Presentation • Group discussion	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)
Main References (Sources)	NO
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Course Description Form

1. Course Name :
Plant Breeding Practical- <i>Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah</i>
2. Course Code:
PLBR414
3. Semester / Year:
2025-2026
4. Description Preparation Date:
31-5-2026
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):
4 units – 2 hours
7. Course Administrator's Name
Name: Rawafid Hadi Al-obaidi Email: rawafid.qasim: @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	2	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	2	The floral system and its relationship to pedagogy and calculating the percentage of variation for a	The student should be familiar with floral systems and their differences.	Lecture with explanation and presentation	Oral discussion and questions
3	2	Learn about the floral system of self-pollinating crops	The student should be able to understand the impact and benefit of genetic variations in breeding programs.	Lecture with explanation and presentation	Oral discussion and questions

4	2	Learn about the floral system of cross-pollinated crops	The student should be able to understand and distinguish between the parts of the flower in the plant.	The student should be able to benefit from employing the phenomenon of infertility in the education	Scientific visit
5	2	Implementing taxes on some self-pollinating crops	Identifying male sterility and conducting crosses on some self-pollinated and cross-pollinated crops	Lecture with explanation and presentation	Oral discussion and questions
6	2	Conducting taxes on some cross-pollinated crops	Practical application of chromosome duplication	Learn how to breed the Shelami wheat crop using chromosome	Oral discussion and questions
7	2	None	First-month exam	None	none
8	2	Field identification of vegetatively pollinated crops	The student should be able to distinguish between vegetatively propagated crops and their	Scientific visit	Discussion between students and between them and the subject teacher or
9	2	Practical examples of hybrid vigor and indoor breeding in self-pollinated and cross-pollinated crops	The student should be able to solve problems related to hybrid strength.	Lecture with explanation, presentation and problem solving	Oral discussion in the classroom
10	2	A field visit to learn about fodder and vegetatively reproductive plants	The student should be familiar with the plant species present in the field and how to distinguish between them.	Scientific visit	Discussion between students and between them and the subject teacher or

11	2	Using backcrossing to transfer resistance traits and field visits to identify and diagnose diseases and insects that affect crops	The student should be able to choose the appropriate educational method according to the purpose of implementing the program.	Practical application in the field	Assign students to feminize some flowers as a first step in the breeding program.
12	2	Inheritance accounts of all kinds	The student should be able to calculate the retention factor and know the benefits of using it.	Lecture with explanation and presentation	Oral discussion and questions
13	2	None	Second month exam	none	None
14	2	Identify the reasons for different heritability values	The student should be able to understand the types of inheritance and the differences between them.	Lecture with explanation and presentation	Oral discussion and questions
15	2	Genetic mutations, their types and benefits of using them in breeding programs	The student should be familiar with the types of genetic mutations and their practical benefits.	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 5 points for reports and projects 5 points for the first monthly exam 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 (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...)	No
Electronic references, websites	Some research and articles on plant breeding and improvement