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

Academic Program and Course Description Guide

2025

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

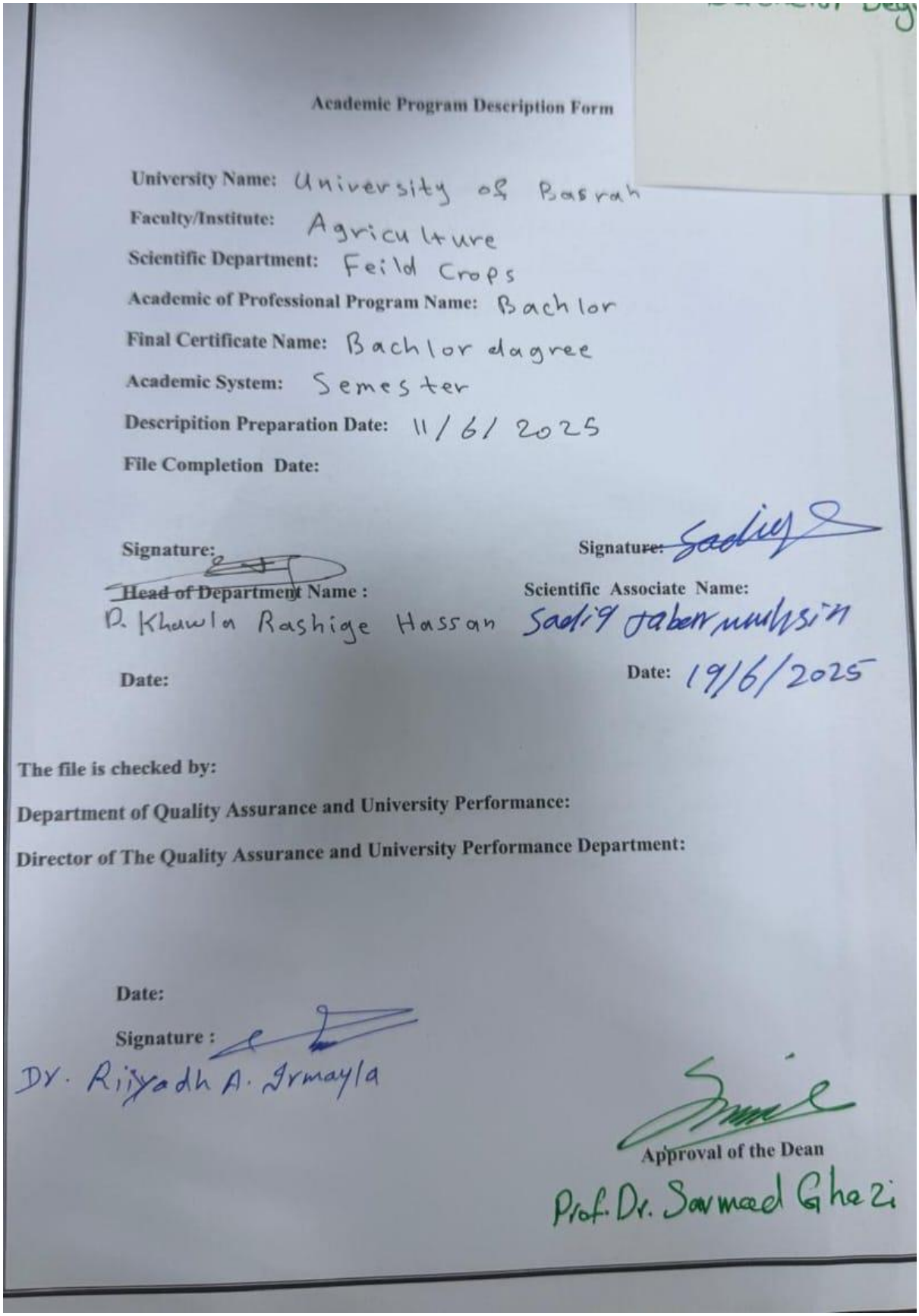
Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

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

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

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

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



Academic Program Description Form

University Name: University of Basrah

Faculty/Institute: Agriculture

Scientific Department: Feild Crops

Academic of Professional Program Name: Bachlor

Final Certificate Name: Bachlor degree

Academic System: Semester

Descripition Preparation Date: 11/6/2025

File Completion Date:

Signature:

Head of Department Name : D. Khawla Rashige Hassan

Date:

Signature:

Scientific Associate Name: Sadiq Jaber muhsin

Date: 19/6/2025

The file is checked by:

Department of Quality Assurance and University Performance:

Director of The Quality Assurance and University Performance Department:

Date:

Signature :

Dr. Riyadh A. Irmayla

Approval of the Dean

Prof. Dr. Sarmad Ghazi

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? Seeks support

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**	
Second stage First Semester	**COMP202**	**Applications of Computer /3**	**-**	**3**
	HORT216	**Principles of Horticulture**	**3**	**2**
	AGEQ232	**Agricultural machines and Equipment**	**3**	**2**
	FOIN231	**Principles of Food Industries**	**3**	**2**
	BACR205	**Baath party Crimes**	**-**	**2**
	SOFE211	**Fertilizer and soil fertility**	**3**	**2**
	AGEX213	**Agricultural Extension**	**-**	**2**
	PLTX217	**Plant Taxonomy**	**3**	**2**
	COMP202	**applications of computer 3**	**-**	**3**
Second stage Second Semester	**FAMA244**	**farm management**	**3**	**2**
	OSCR214	**Oil and sugar crops**	**3**	**2**
	STAT224	**General Statistics**	**3**	**2**
	PLEC212	**Plant ecology**	**3**	**2**

	MICB218	**Principles of Microbiology**	**3**	**2**
	IRDR215	**Irrigation and Drainage**	**3**	**2**
	ENCL206	**English language 2**	**-**	**1**
	COMP203	**applications of Computer /4**	**3**	**-**
	GENE335	**General Genetics**	**3**	**2**
Third Stage First Semester	**DAEX327**	**Design and Analysis of Experiments**	**3**	**2**
	GRCR315	**Cereal crops**	**3**	**2**
	CRIN312	**Crop insects**	**3**	**2**
	LARE316	**land reclamation**	**3**	**2**
	FOCR314	**forage crops**	**3**	**2**
Third Stage Second Semester	**FBCR317**	**fiber crops**	**3**	**2**
	CRDS319	**field crop diseases**	**3**	**2**
	CRME320	**Mechanization of FieldCrops**	**3**	**2**
	SETE318	**seed technology**	**3**	**2**
	LECR313	**legume crops**	**3**	**2**
	ENGL306	**English language /3**		**1**
Forth Stage First semester	**DRPL412**	**Drugs Plants**	**3**	**2**
	PLPH420	**plant physiology**	**3**	**2**
	WEBI413	**Weed biology**	**3**	**2**
	CRMA415	**field crops management**	**3**	**2**

	MACU416	Marshland Cultivation	3	2
	MOGE425	molecular genetics	3	2
	GRPR421	Project Graduation 1	3	-
	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	3	2
	SEMN423	Seminars	-	1
	PLBR414	plant breeding	3	2
	GRPR422	Project Graduation 2	3	-

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**
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 outline																	
				Required Program Learning Outcomes													
Year	Course Code	Course Name	Basic or Optional	Knowledge				Skills				Ethics					
1				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4		
2	HORT216	Principles of	Basic	√	√	√	√	√		√		√	√	√	√		
2	AGEQ232	Agricultur	Basic	√	√	√	√	√		√		√	√	√	√		
2	FOIN231	food industries	Basic	√	√	√	√	√		√		√	√	√	√		
2	AGEX213	Agricultural	Basic	√	√	√	√	√		√		√	√	√	√		
2	SOFE211	Fertilizer and soil fertility	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	PLTX217	Plant Taxonomy	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	COMP202	Applications of Computer /3	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	FAMA244	farm manageme	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	ENCL206	English language2	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	OSCR214	Oil and sugar crops	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	STAT224	General Statistics	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	PLEC212	Plant Ecology	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	MICB218	Principles of	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	IRDR215	Irrigation and	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	COMP203	Applications of Computer	Basic	√	√	√	√	√	√	√		√	√	√	√		
2	BACR205	Baath party	Basic	√	√	√	√	√	√	√		√	√	√	√		
3	GENE335	General Genetics	Basic	√	√	√	√	√	√	√		√	√	√	√		
3	DAEX327	Design and analysis of	Basic	√	√	√	√	√	√	√		√	√	√	√		

3	**CRME320**	**mechanization of Field crops**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**CRIN312**	**Crop insects**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**LARE316**	**land reclamatio**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**FOCR314**	**Forge Crops**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**FBCR317**	**fiber crops**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**GRCR315**	**Cereal crops**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**CRDS319**	**field crop diseases**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**SETE318**	**seed technology**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3	**ENGL306**	**English language /3**													
4	**DRPL412**	**Drugs Plants**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4	**PLPH420**	**plant physiology**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4	**WEBI413**	**Weed biology**	**Basic**	√	√	√	√	√		√		√	√	√	√
4	**CRMA415**	**field crops manageme**	**Basic**	√	√	√	√	√		√		√	√	√	√
	ENGL406	**English language /**	**Basic**	√	√	√	√	√		√		√	√	√	√
4	**MACU416**	**Marshland Cultivation**	**Basic**	√	√	√	√	√		√		√	√	√	√
4	**MOGE425**	**molecular genetics**	**Basic**	√	√	√	√	√		√		√	√	√	√
4	**GRPR421**	**project Graduation**	**Basic**	√	√	√	√	√		√		√	√	√	√
4	**PLBR414**	**plant breeding**	**Basic**	√	√					√		√	√	√	√
4	**DLCU419**	**Desert Land**	**Basic**	√	√					√		√	√	√	√
4	**WECO418**	**Weeds and Control**	**Basic**	√	√		√	√		√		√	√	√	√
4	**ENST424**	**environmental stress**	**Basic**	√	√		√	√		√		√	√	√	√
4	**PAMA417**	**pasture management**	**Basic**	√			√	√		√		√	√	√	√
4	**PAMA417**	**Seminars**	**Basic**	√			√	√		√		√	√	√	√
4	**GRPR422**	**project Graduation 2**	**Basic**	√	√		√	√		√		√	√	√	√

Course Description Form

1. Course Name:					
Principles of horticulture					
2. Course Code:					
HORT216					
3. Semester / Year:2024 – 2025					
First Semester (Department of Crops)					
4. Description Preparation Date:2025					
1-2-2025					
5. Available Attendance Forms:					
In-person (Crops Lecture Hall)					
6. Number of Credit Hours (Total) / Number of Units (Total):					
3 / 3.5					
7. Course Administrator's Name (Mention All, If More Than One Name)					
Name: Dr. Dukhoola Hamza Mohammed **Email:**					
8. Course Objectives					
Course Objectives	The course introduces the science of horticultural crops, its economic importance, and the basic classifications of horticultural products. It also covers key agricultural practices in the production of horticultural crops such as irrigation, fertilization, pruning, and propagation methods of fruit, vegetable, and ornamental plants.				
9. Teaching and Learning Strategies					
Strategy	**The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.**				
10. Course Structure					
Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**

1	**3**	Understanding the history and branches of horticulture	Historical overview, main branches, relation to other fields	Lecture with presentation	Projector
2	**3**	Understanding basic nutritional components of plants	Nutritional value of crops, nutrients, vitamins, proteins, carbohydrates	Theoretical lecture, group discussion	Presentation, oral questions
3	**3**	Effect of temperature, light, wind	Environmental factors influencing crop growth: temperature, humidity, wind	Lecture, video	Oral questions
4	**3**	Effect of soil, water, salinity	Soil-related factors: soil, water, salinity	Lecture with presentation	Projector
5	**3**	Propagation by seeds	Sexual reproduction: definition, importance, applications	Lecture, discussion	Quiz + oral questions
6	**3**	Asexual propagation	Methods: cuttings, grafting, layering, corms, tubers	Lecture with presentation	Projector
7	**3**	Importance of tissue culture	Tissue culture techniques, scientific and practical applications	Monthly exam + live model	Projector
8	**3**	Irrigation and fertilization methods	Agricultural practices: irrigation, fertilization, pruning	Lecture + live model	Oral questions
9	**3**	What is protected cultivation	Controlled environment farming: greenhouses and plastic houses	Lecture + live model	Projector
10	**3**	Understanding nurseries	Nursery definition, establishment requirements, types	Lecture, discussion, video	Quiz + oral questions
11	**3**	Differentiating horticultural crops	Classification of vegetables and fruits	Discussion	Quiz + oral questions

12	**3**	Major ornamental plants	Classification: flowers, trees, shrubs, hedges	Lecture and discussion	Oral questions
13	**3**	Continuation on ornamental	Same as above	Lecture with presentation	Projector
14	**3**	What are medicinal plants	Definition, examples, benefits, cultivation methods	Lecture + discussion	Monthly exam
15	**3**	General summary	Summary and review	Lecture, presentation	Exam papers

11. Course Evaluation	
Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Fundamentals of Horticultural Science (1991), Dar Al-Kutub Publishing,
Main References (Sources)	Al-Sahaf, Fadel Hassan (1989), Applied Plant Nutrition, Bayt Al-Hikma Publishing, University of Baghdad, Ministry of Higher Education and Scientific Research, Iraq
Recommended Books and References (Scientific Journals, Reports...)	**no**
Electronic References, Websites	Not specified

Course Description Form

1. Course Name:
Principles of horticulture
2. Course Code:
HORT216

3. Semester / Year:
2024 – 2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attending college within practical crop hall
6. Number of Credit Hours (Total) / Number of Units (Total):
3 / 3.5
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Ahmed zaer resan Email: ahmed.resan@uobasrah.edu.iq

8. Course Objectives	
Course Objectives	• Defining the science of horticulture and main mothed of reproduction of fruit and vegetative and decoration plants

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

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Learn about vegetable gardening	Horticultural Plants Overview	Lecture with practical explanation .	Brainstorming

2	**3**	**Knowing the divisions of horticultural plants**	**The foundations upon which the division of horticultural plants is based**	**Lecture with explanation and presentation**	**quiz**
3	**3**	**The most important plants of the Solanaceae family**	**Factors affecting plant growth - the most important plants of the family - methods of propagation - plant services factors ,tem,humitiy ,wind**	**Lecture with explanation and presentation**	**Practical application in the field**
4	**3**	**Factors affecting plants of the Solanaceae family**	**Factors affecting the growth and productivity of the Solanaceae family - planting time - planting method - examples of some Solanaceae family plants**	**Lecture with practical explanation in the field**	**Quiz and Brainstorming**
5	**3**	**Cucurbitaceae family**	**Some plants of the Cucurbitaceae family**	**Lecture with practical explanation in the field**	**Direct questions**
6	**3**	**Ornamental trees**	**Propagation and maintenance of some ornamental plants**	**Lecture with explanation and presentation**	**Make a report on ornamental plants**
7	**3**	**Fruit trees**	**Factor Vegetative propagation ,budding ,cutting ,larying**	**Types of fruits and methods of propagation**	**Grow some plants and write a report about them**
8	**3**	**Monthly exam**	**Monthly exam**	**Monthly exam**	**Monthly exam**

9	**3**	**Types of greenhouses**	**Plastic, glass, and wooden greenhouses How to build them and their costs**	**Lecture with practical explanation in plant facilities**	**Make a report**
10	**3**	**Scientific trip**	**Scientific trip**	**Scientific trip**	**Scientific trip**
11	**3**	**Methods of plant propagation**	**Sexual reproduction of plants, timing of propagation, processes to accelerate germination, characteristics of good seeds**	**Lecture with practical explanation in the field**	**Direct cultivation**
12	**3**	**Plant propagation methods**	**Vegetative propagation, grafting, grafting, propagation by cuttings, layering,**	**Lecture with explanation and presentation**	**Direct propagation**
13	**3**	**Service operations**	**Plowing, weeding, fertilizing, planting, thinning, patching, soil export**	**Lecture with practical explanation**	**Direct application**
14	**3**	**Monthly exam**	**Monthly exam**	**Monthly exam**	**Monthly exam**
15	**3**	**Flower Flower exam**	**Division of ornamental plant ,flower ,tree**	**Lecture with explanation and presentation**	**Display Screen .**
11. Course Evaluation					
Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc.					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)					

Main References (Sources)	**Chen,Q.;Bi.J.;Wu,X.;Yi,J.;Zhou.L.and Zhou,Y.(2015).Drying Kinetics and Quality attributes of jujube slices dried by hot-air and shortand medium-wave infrared radiation LWT-Food Science and technology.64:759-766.**
Recommended Books and References (Scientific Journals, Reports...)	١
Electronic References, Websites	

Course Description Form

1. Course Name:	
Principles of Food Industries theoretical	
2. Course Code:	
FOIN231	
3. Semester / Year:2024-2025	
First semester- second stage	
4. Description Preparation Date:	
2-1-2025	
5. Available Attendance Forms	
I attend full time	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3/ 3.5-5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: hala yahya essia Email: hala.essia@uobasrah.edo.iq	
8. Course Objective	
Course Objectives	**Make the student familiar with the methods of manufacturing and preserving food by introducing him to the most important modern and ancient methods used for preservation and manufacturing and knowing the causes of spoilage and spoilage of food materials**
9. Teaching and Learning Strategies	

Strategy	**The food industry principles curriculum is one of the important curricula in preparing competent agricultural engineers in the field of food technology who are up to date with the needs of the labor market**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Explaining the importance of food components to the human body	Food ingredients	Explanation using the display screen	I ask questions to discuss with
2	2	Know the steps of canning	Preserving food by canning	Explanation using the display screen	During a short exam
3	2	The role of refrigeration in food preservation	Preserving food by cooling	Explanation using the display screen	During a short exam
4	2	The importance of freezing	Preserving food by freezing	Explanation using the display screen	I ask questions to discuss with
5	2	Know the benefits of meat components for the body	Nutritional value of meat	Explanation using the display screen	During a short exam
6	2				Exam1
7	2	Benefits of tea for the body	Tea industry	Explanation using the display screen	I ask questions to discuss with
8	2	The harmful effects of food additives on the human body	Food additives	Explanation using the display screen	I ask questions to discuss with
9	2	Explaining the manufacturing steps	Sugar industry	Explanation using the display screen	During a short exam
10	2	Methods of manufacturing some meat products	Manufacture of meat products	Explanation using the display screen	During a short exam

11	**2**	**Exam2**			
12	**2**	**How to manufacture pasta**	**Pasta industry**	**Explanation using the display screen**	**During a short exam**
13	**2**	**Explaining the materials involved in the industry and their importance**	**Manufacture of sweets and pastries**	**Explanation using the display screen**	**I ask questions to discuss with**
14	**2**	**Knowledge of other industries**	**Other industries**	**Explanation using the display screen**	**During a short exam**
15					**End of the class exam**

11. Course Evaluation
The final exam consists of 50 theoretical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	**Hassan, Abdul Ali Mahdi (1995). Principles of food industries. Dar Al**
Recommended Books and References (Scientific Journals, Reports...)	**NO**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Practical principles of Food Industries field crops section
2. Course Code

FOIN231					
3. Semester / Year:					
First semester-second stage2024-2025					
4. Description Preparation Date:					
2-1-2025					
5. Available Attendance Forms:					
I attend full time					
6. Number of Credit Hours (Total) / Number of Units (Total):					
3/ 3.5					
7. Course Administrator's Name (Mention All, If More Than One Name)					
Name: hala yahya essia Email: hala.essia@uobasrah.edo.iq					
8. Course Objective					
Course Objectives			**Make the student familiar with the methods of manufacturing and preserving food by introducing him to the most important modern and ancient methods used for preservation and**		
9. Teaching and Learning Strategies					
Strategy		**The food industry principles curriculum is one of the important curricula in preparing competent agricultural engineers in the field of food technology who are up to date with the needs of the labor market and able to compete in developing the food industry .and its products in the country**			
10. Course Structure					
Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**

1	**2**	**Explaining the importance of food components to the human body**	**Food ingredients**	**Explanation using the display screen**	**I ask questions to discuss with students**
2	**2**	**Know the steps of canning**	**Preserving food by canning**	**Explanation using the display screen**	**During a short exam**
3	**2**	**The role of refrigeration in food preservation**	**Preserving food by cooling**	**Explanation using the display screen**	**During a short exam**
4	**2**	**The importance of freezing**	**Preserving food by freezing**	**Explanation using the display screen**	**I ask questions to discuss**
5	**2**	**Know the benefits of meat components for the body**	**Nutritional value of meat**	**Explanation using the display screen**	**During a short exam**
6	**2**				**Exam1**
7	**2**	**Benefits of tea for the body**	**Tea industry**	**Explanation using the display screen**	**I ask questions to discuss**
8	**2**	**The harmful effects of food additives on the human body**	**Food additives**	**Explanation using the display screen**	**I ask questions to discuss with students**

9	**2**	**Explaining the manufacturing steps**	**Sugar industry**	**Explanation using the display screen**	**During a short exam**
10	**2**	**Methods of manufacturing some meat products**	**Manufacture of meat products**	**Explanation using the display screen**	**During a short exam**
11				**Explanation using the display screen**	**Exam2**
12	**2**	**How to manufacture pasta**	**Pasta industry**	**Explanation using the display screen**	**During a short exam**
13	**2**	**Explaining the materials involved in the industry and**	**Manufacture of sweets and pastries**	**Explanation using the display screen**	**I ask questions to discuss**
14	**2**	**Knowledge of other industries**	**Other industries**	**Explanation using the display screen**	**During a short exam**
15		**Exam2**			**End of the class exam**

11. Course Evaluation

The final exam consists of 50 Practical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	**Hassan, Abdul Ali Mahdi (1995). Principles of food industries. Dar Al Kindi for**
Recommended Books and References (Scientific Journals, Reports...)	**NO**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
Soil Fertility and Fertilizers	
2. Course Code:	
SOFE211	
3. Semester / Year:	
first semester \ second stage	
4. Description Preparation Date:	
31-1-2025	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours (2 Theoretical and 3 practical) 3.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Wafaa A .Ahmed	**Email:** wafa.ahmed@uobasrah.edu.iq
8. Course Objectives	
Course Objectives	• **Identify the types of fertilizers** • **The most important interactions of fertilizers in the soil** • **Methods of adding fertilizers**
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 outcome	Unit or Subject Name	Learning Method	Evaluation Method
1	2	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	Nutrient elements and classification	Lecture with explanation presentation	daily exam
2	2	To be able to understand and compreh	Source of nutrients	Lecture with explanation presentati	daily exam

		end the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam		**on**	
3	**2**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson.**	**Factors affecting soil fertility**	**Lecture with explanation presentation**	**daily exam**

		The ability to repeat the material for the next daily and monthly exam			
4	**2**	**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**	**Soil fertility and plant growth**	**Lecture with explanation presentation**	**daily exam**

		monthly exam			
5					**Exam1**
6	**2**	**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**	**Nitrogen of soil and fertilizer**	**Lecture with explanation presentation**	

		monthly exam			
7 – 8	**2**	**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**	**Phosphorus of soil and fertilizers**	**Lecture with explanation presentation**	**daily exam**
9 – 10	**2**	**To be able to understand and**	**Potassium of soil and fertilizers**	**Lecture with explanation**	**daily exam**

		comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam		**presentation**	
11	**2**	**To be able to understand and comprehend the theoretical material and apply it in the practical**	**Sulfur of soil and fertilizers**	**Lecture with explanation presentation**	**daily exam**

		lesson. The ability to repeat the material for the next daily and monthly exam			
12 – 13	**2**	**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**	**Trace elements**	**Lecture with explanation presentation**	**daily exam**

		and monthly exam			
14	**2**	**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**	**Organic manures**	**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)	نوري عبدالقادر حسن واخرون .1990.خصوبة التربة والاسمدة .كلية الزراعة-جامعة البصرة.
سعدالله النعيمي .1999.الأسمدة وخصوبة التربة .كلية الزراعة والغابات-جامعة الموصل	
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Practical part					
1	3		Nitrogen fertilizer problems and ways to treat them	Attending lecture	Practical report
2	3		Ammonia volatilization from nitrogen fertilizers	Attending lecture	Practical report
3	3		Testing the amount volatile ammonia from urea fertilizer	Attending lecture	Practical report + Daily test
4 - 5 - 6	3		Testing the amount of volatile ammonia from nitrogen fertilizer using :- 1- Different fertilizer sources 2- Different ways to add 3- Soils of different textures	Attending lecture	Practical report
7 - 8	3		Manufacture of nitrogen , phosphate, potassium fertilizers	Attending lecture	Practical report + Daily test

9	**3**		Phosphate fertilizer problems and ways to treat them	Attending lecture	Practical report
10	**3**		Manufacture of slow- relese phosphate fertilizers such as urea phosphate fertilizers	Attending lecture	Practical report + Daily test
11 -12	**3**		Efficiency test of manufacture urea phosphate fertilizer in comparison with commercial fertilizers	Attending lecture	Practical report
13	**3**		Study the properties and composition of organic matter	Attending lecture	Practical report
14	**3**		Exam	Exam	Exam
15	**3**		Discuss the experiment reports	Discuss reports	Discuss reports

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)	**Unavailable**
Main References (Sources)	**Soil organic matter:** Edited by • M. Schnitzer - Soil Research Institute, Agriculture Canada, Ottawa, Ont., Canada • S.U. Khan - Chemistry and Biology Research Institute, Agriculture Canada, Ottawa, Ont., Canada Volume 8, **Effect of climate change on soil and its components** Mohamed Abdul-Rahemm and Hayfaa J.Hussein (2023).Lambert Acadimic Publishing **Mineral and Organic Fertilization and its**

	Effect on the Environment.2023. Mohamed Abdul-Rahemm and Hayfaa J.Hussein. NOOr Publishing
Recommended Books and References (Scientific Journals, Reports...)	Awad,K.M.1986. Soil chemistry Abdul Reda,H.A.2022.Biofertilizers technologies Hussein,H.J.2023.Mineral and organic fertilizers technologies **.**
Electronic References, Websites	https://www.amazon.com/Fertilizer-Technology-Management-Brahma-Mishra/dp/9389583942. https://www.amazon.com/Fertilizers-Technology-Knowledge-Prem-Baboo/dp/B08RR9SCG9

Theoretical Course Description

1. Course Name:
Computer
2. Course Code:
COMP101
3. Semester / Year:
second semester 2024-2025
4. Description Preparation Date:
30/1/2025
5. Available Attendance Forms:
In-person education
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: **Akram Abdel-Daem Ahmed Touma** Email: **akram.ahmed@uobasrah.edu.iq**

8. Course Objectives	
Course Objectives	• **Introducing students to the components of the computer, teaching them how to use it, and training them on specialized software applications such as word processing, spreadsheets, and presentations.**
9. Teaching and Learning Strategies	
Strategy	**1 .Active interest and participation in the study location (classroom, laboratory, agricultural field) demonstrates the student's commitment and responsibility.** **2. Adherence to the specified deadlines for submitting required reports, homework, and research.**
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
The first	**3**	**I**ntroduction to computer	concepts of hardware and software with their components , concept of copmputing , data and information, connecting iput/output devices, and peripherals to CPU	**Lecture and presentati on**	**Quarterly exam +Quiz + reports**
The second	**3**	Computer components	computer portins, hardweare parts, I/O Units, memory types.	**Lecture and presentati**	**Quarterly exam +Quiz + reports**
The third	**3**	Computer components (Cont):	CPU components, computer ports, personal computer. Personal computer (features and types.	**Lecture and presentati on**	**Quarterly exam +Quiz + reports**

The fourth	**3**	Opereating system and graphical user Interface GUI	Opereating system and graphical user Interface GUI: operating system, Basics of common operating systems, The uses interface, using mouse techniques.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The fifth	**3**	Opereating system and graphical user Interface GUI(Cont)	Opereating system and graphical use of common icons, status bar, using menu and menu-selection, Concept of folders and directories, opening and closing of	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The sixth	**3**	Word processing:	word processing basics features of word processors, opening and closing of documents, text creation and manipulation, formatting text and paragraphs, using tampletes for document creation	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The seventh	**3**	Word processing (cont)	Creating and managing tables, utilizing styles and themes, spell check and grammar tools, using headers and footers.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The eighth	**3**	Spread sheet	Introduction to spreadsheet software, creating and formatting worksheets, sorting and filtering data, using formulas and functions.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The ninth	**3**	Spread sheet(cont)	Using formulas and function , using pivot tables for data analysis m data validation and error checking, data visualization: creating charts and graphs.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The tenth	**3**	Presentation software	Introduction to presentation software , overview of popular presentation tools, creating a new presentation , using templates and themes, inserting and formatting text and images, transition and	**Lecture and presentation**	**Quarterly exam +Quiz + reports**

The eleventh	**3**	Presentation software(cont)	Using speaker notes and timers, advanced features :hyperlinks and action buttons, troubleshooting common presentation issues, future trends in presentation technology.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The twelveth	**3**	Introduction to internet and web browsers:	Computer networks basic : LAN , WAN, concept of internet and its applications: connecting to internet.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The Thirteenth	**3**	Introduction to internet and web browsers(co	World wide web; web browsing software's, search engines; understanding URL; Domain name; IP Address.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The fourteenth	**3**	Communications and Emails:	Basics of electronic mail; getting an email account; Sending and Receiving emails; accessing sent emails; using emails document collaboration.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The Fifteenth	**3**	Introduction to cloud computing and services:	Definition of cloud computing and its concept, cloud-based office suites (office 365 and google workspace), google docs, google sheets, google drive, google meet.	**Lecture and presentation**	**Quarterly exam +Quiz + reports**

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. **Homework: 10%** , **Daily exam: 10 %** , **Scientific reports: 10% , Other activities :10%, MID exam: 10% Written exam : 50%**

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**Information and communication technology (Graham Brown , David Watson ,2020). Technology in action Complete , 16th edition (Alan Evans, Kendall Martin , Mary Anne Poatsy,2020).**
Main References (Sources)	**1- أساسيات الحاسوب , الخضر علي الخضر 2016.** **2- مدخل إلى عالم الذكاء الأصطناعي د. عادل عبد النور , 2005.**
Recommended Books and References (Scientific Journals, Reports...)	**Introduction to Artificial intelligence(Al) , 1st Edition. Ahmed Banafa (2024).**

Electronic References, Websites	**No**

Course Description Form

1. Course Name:
(plant ecology) - Second stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
PLEC212
3. Semester / Year:
2024-2025
4. Description Preparation Date:
10-9-2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):
2
7. Course Administrator's Name
Name: Rawafid Hadi Al-obaidi Email:rawafid.qasim : **@uobasrah.edu.iq**
8. Course Objectives

Course Objectives	**1 -Learn about ecology and its relationship with living organisms** **2 -Identifying climatic and oceanic conditions and their relationship primarily with plant organisms in a sequential scientific manner.** **3 -Identify the effect of climatic conditions on the growth of different plants** **4- Introducing students to environmental pollution, its types, types, harms, and future plans to avoid its risks.**

9. Teaching and Learning Strategies

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**	**The student should be able to get an idea about the concept of environment and environmental factors.**	**Definition of ecology and the study of environmental factors.**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
2	**2**	**The student should be able to identify different ecosystems.**	**The ecosystem and its relationship to human ecology and the complete types of ecosystems**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
3	**2**	**The student should be able to understand the meaning of ecological succession.**	**Ecological succession, introduction, hydrological succession and arid succession**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**

4	**2**	**To form an idea in the student about the difference between weather and climate**	**Climate, weather, dividing the regions of the world according to the prevailing climate**	**a lecture with an explanation, a presentation,**	**Short exam**
5	**2**	**The student should be able to understand the effects of light on plant life.**	**Plant efficiency in using light, effects of light on plants**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
6	**2**	**The student should be able to understand the thermal effects on plant life cycles.**	**Temperature, temperature efficiency, accumulated heat, effect of heat on plants, temperature damage**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
7	**2**	**None**	**First month exam**	**None**	**none**
8	**2**	**The student should be able to distinguish the importance of water within the ecosystem, and understand how to calculate water consumption efficiency.**	**Water, crop water needs, factors affecting water consumption efficiency**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
9	**2**	**The student should have the ability to understand the relationship of water to plant life.**	**The relationship of water to plants, division of plants**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**

10	**2**	**The student should be able to identify the types of winds, their benefits and harms.**	**Wind, its effect on plants, harms and benefits of wind**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
11	**2**	**The student should be able to identify the types of winds, their benefits and harms.**	**Atmospheric humidity has an effect of moisture on crop growth.**	**a lecture with an explanation, a presentation,**	**Short exam**
12	**2**	**None**	**Second exam**	**none**	**none**
13	**2**	**The student should be able to understand the importance of humidity in the vitality and transmission of pollen grains.**	**Environmental pollution, introduction, definition, nature of polluting materials, air pollution, soil pollution.**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
14	**2**	**The student should be aware of the significant impact of pollution on the environment.**	**Water pollutants and methods of treating them, soil pollution and methods of treating and reducing it.**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
15	**2**	**The student should be able to understand the meaning of atmospheric humidity and its role in plant life.**	**Factors affecting atmospheric humidity, the effect of humidity on the pollination process and the spread of pollen**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
11. Course Evaluation					

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc. 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)	**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 plant environment**

Course Description Form

1. Course Name:
Practical plant ecology
2. Course Code:
PLEC212
3. Semester / Year:
First semester - The first stage / 2024-2025
4. Description Preparation Date:
2/2/2025
5. Available Attendance Forms:
My presence in the jungle laboratory- I attend full time
. Number of Credit Hours (Total) / Number of Units (Total)6

(3 practical hours) 3 units					
. Course Administrator's Name (Mention All, If More Than One Name)7					
Email: Sundus.jabar@uobasrah.edu.iq **Sunds kamel jabbar** **Name:**					
8. Course Objectives					
Course Objectives •			**• Identify the most important devices associated with weather monitoring stations** **• Identify the environmental factors affecting atmospheric pressure, solar radiation, and others.**		
9. Teaching and Learning Strategies					
Strategy		**The lesson includes (3 practical hours) a number of weekly credit hours distributed over 15 weeks**			
10. Course Structure					
Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**

1	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Meteorological stations**	**Lecture with explanation and presentation**	**Display Screen**
2	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Solar radiation and measuring devices**	**Lecture with explanation and presentation**	**Display Screen**

3	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	Temperatures and devices for measuring them in the atmosphere and soil	Lecture with explanation and presentation	Display Screen
4	3		Exam1		
5	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	Temperature system and how to calculate it Atmospheric pressure, measuring devices, and how to calculate it	presentation	Display Screen

6	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Humidity and its measuring devices in the atmosphere and soil**	**Lecture with explanation and presentation**	**Display Screen**
7	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Evaporation and evaporation measuring devices**	**Lecture with explanation and presentation**	**Display Screen**

8	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Precipitation, rain and dew measuring devices**	**Lecture with explanation and presentation**	**Display Screen**
9	**3**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Calculating the rainfall rate**	**Lecture with explanation and presentation**	**Display Screen**

10	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson.	Wind, devices for measuring wind speed and direction	Lecture with explanation and presentation	Display Screen
11	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	Natural plant environments in the world and Iraq	Lecture with explanation and presentation	Display Screen
12	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and	Forest vegetation in the world and Iraq	Lecture with explanation and presentation	Display Screen

13	3	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	A field visit to the weather station	Lecture with explanation and presentation	Display Screen
14	3	To be able to understand and assimilate the theoretical material and	Meteorological stations	Lecture with explanation and presentation	Display Screen
15			Exam2		

11. Course Evaluation
The final exam consists of 50 Practical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	Lectures from a website
Main References (Sources)	No
Recommended Books and References (Scientific Journals, Reports...)	No
Electronic References, Websites	No

Course Description Form

1. Course Name:	
Plant Taxonomic) - Second stage - Field Crops Department - College of Agriculture - University of Basra	
2. Course Code:	
PLTX217	
3. Semester / Year:	
The first course- second stage (-2025-2024)	
4. Description Preparation Date:	
6/ 4/ 2025	
5. Available Attendance Forms:	
My presence in Plant Classification Lab.- I attend full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours per week - 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Name: Zainab Ahmed Abdul- Razaq **Email: zainab.ahmed@uobasrah.edu.iq**	
8. Course Objectives	
Course Objectives	**1- Providing students with theoretical and applied information on methods of classifying plants, taxonomic ranks, and the foundations of plant classification.** **2- • Providing students with theoretical and applied information on the structure and parts of various plants.**
9. Teaching and Learning Strategies	
Strategy	**The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.**
10. Course Structure	

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

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

14	**2**	**The student knows the importance of reproduction**	**Seeds - Classification of seeds- Diagnose and distinguish crop seeds The fruit - types of fruits - The stages of fruition**	**Lecture with explanation and presentation**	**Discussions and questions**
15	**2**	**The student knows the importance of reproduction Students' knowledge of flowering vascular plants**	**non-flowering vascular plants**	**Lecture with explanation and presentation**	**Discussions and questions**

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

Course Description Form

1. Course Name:

Practical Plant Taxonomic) - Second stage - Field Crops Department - College of Agriculture - University of Basra
2. Course Code:
PLTX217
3. Semester / Year:
The first course- second stage (-2024-2025)
4. Description Preparation Date:
6/ 2/ 2025
5. Available Attendance Forms:
My presence in Plant Classification Lab. I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total)
5 hours per week - 3 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Sundus kamel jabbar **Email Sundus.jabar@uobasrah.edu.iq**

8. Course Objectives	
Course Objectives	**1- Providing students with theoretical and applied information on methods of classifying plants, taxonomic ranks, and the foundations of plant classification.** **2- • Providing students with theoretical and applied information on the structure and parts of various plants.**

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	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	Fundamentals of Plant Classification and Taxonomic Categories	Lecture with explanation and present	Display screen + whitebo ard
2	3	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	Scientific nomenclature - plant classification	Lecture with explanation and presentation	Display screen + whitebo ard
3	3	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	The roots Morphological of roots- types of roots	Lecture with explanation and presentation	Display screen + whitebo ard + Live symple
4	3	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	Stems - types of stems - modifications of stems	Lecture with explanation and presentation	Display screen + whitebo ard + Live simple
5	3		Exam1		
6	3	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	- leaf Apex- leaf Venation- Leaves Arrangment- leaf mutations	Lecture with explanation and presentation	Display screen + whitebo ard + Live symple

7	**3**	**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**	**Flower** **flower components**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live simple**
8	**3**	**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 field visit to nearby crop fields to learn about plants**		
9	**3**	**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**	**types of flowers**	**Lecture with explanation and present**	**Display screen + whitebo ard +**
10	**3**	**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**	**Aestivation** **Symmetry**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live symple**
11	**3**	**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**	**Placentation**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live symple**
12	**3**	**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**	**Inflorescences - types of inflorescences**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live symple**

13	**3**	**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**	**The fruit - types of fruits -** **The stages of fruition**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live symple**
14	**3**	**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**	**Seeds - Classification of seeds-** **Diagnose and distinguish crop seeds**	**Lecture with explanation and presentation**	**Display screen + whitebo ard + Live symple**
15	**3**		**Second Exam**		

11. Course Evaluation	
The final exam consists of 20 practical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any) **Main References (Sources)** **Recommended Books and References (Scientific Journals, Reports...)**	**1- Plant taxonomy** **Ali Hussein Issa** **2- Principle general plant** **Abdullah Hamad Al Musawi** **D. Hussein Ali Al-Saadi**
Electronic References, Websites	**Multiple sources related to the classification and division of plants**

Theoretical Course Description

1. Course Name:	
Baath regime crimes	
2. Course Code:	
BACR205	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr.widad salim mohammad Email:widad.mohammad@uobasrah.edu.iq.	
8. Course Objectives	
Course Objectives	**1- Talking about part of Iraq's contemporary history, the circumstances it went through, and the nature of the Baath regime that prevailed in that period in Iraq.** • **2- Highlighting the crimes of genocide and human rights violations committed against the Iraqi people.**

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

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation
First	2 hours	The student's understanding of the importance of studying the topic.	Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law in 2005	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture
Second	2 hours	The student's understanding of the most important laws related to crimes.	The crimes of the Baath regime according to the documentation of the Law of the Supreme Iraqi Criminal Court in 2005	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture under supervision and guidanc
Third	2 hours	The student's understanding of the decisions issued regarding crimes committed by the regime.	Decisions issued by the Supreme Criminal Court	An explanatory lecture with explanations and examples using a display screen with a blackboard	Surprise tests and assigning students to manage the lecture under

Fourth	**2 hours**	**The student's understanding of psychological and social crimes and their impact on society at the time.**	**Psychological and social crimes and their effects and the most prominent violations of the Baathist regime in Iraq**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture under supervis**
Fifth	**2 hours**	**The student's understanding of the importance of religion, its impact on society, and how the regime dealt with clerics at the time.**	**The Baathist regime's position on religion**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture under**
Sixth	**2 hours**	**The student's understanding of the extent of the crimes committed in Iraq at the time.**	**Violations of Iraqi laws**	**An explanatory lecture with explanations and examples using a display screen**	**Surprise tests and assigning students to**
Seventh	**2 hours**	**----------**	**exam**	**First-month exam**	
Eighth	**2 hours**	**The student's understanding of the decisions violated at the time and their impact on society.**	**Some decisions regarding political and military violations of the Baath regime**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture**

Ninth	**2 hours**	**The student's understanding of the locations of prisons and torture facilities that were used against society at the time.**	**Prison and detention places of the Baath regime**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture**
Tenth	**2 hours**	**. The student's understanding of the extent of the previous regime's violations of laws and their impact on the environment, the effects of which continue to this day.**	**Environmental crimes of the Baath regime in Iraq**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture under**
Eleventh	**2 hours**	**The stdent's understanding of the exutent of pollution caused by the previous regime's policies**	**Military and radiation pollution, mines, and the destruction of cities and villages**	**An explanatory lecture with explanations and examples using a display screen**	**Surprise tests and assigning students to**
Twelfth	**2 hours**	**The student's understanding of the issue of draining marshes and eroding orchards and their impact on society.**	**Drying the marshes and bulldozing palm orchards, trees and crops**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture**
Thirteenth	**2 hours**	**The student's understanding of the horrific nature of the mass graves that occurred at the time.**	**Mass grave crimes**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the**

Fourteenth	**2 hours**	**The student's understanding of the places and times of the crimes.**	**Chronological classification of genocide graves in Iraq for the period 1963-2003**	**An explanatory lecture with explanations and examples using a display screen with a blackboard**	**Surprise tests and assigning students to manage the lecture**
Fifteenth	**2 hours**		**exam**	**Second month exam**	

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

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**The crimes of the Baath regime in Iraq**
Main References (Sources)	**1. The disintegration of the family and society in and from the Baath.**
Recommended Books and References (Scientific Journals, Reports...)	**Scientific journals**
Electronic References, Websites	**Some research and articles on genetics**

Course Description Form

1. Course Name:
Agricultural equipment and machinery/theoretical part
2. Course Code:
AGEQ232

3. Semester / Year:	
First semester 2024 -2025 / second stage	
4. Description Preparation Date:	
2/1/2025	
5. Available Attendance Forms:	
In-person education- I attend full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2-3.5 units- 5 hours	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Akram Abdel-Daem Ahmed Tohme	**Email: gmail.com@khalidyakram**
8. Course Objectives	
Course Objectives	• **Identify the types of agricultural tractors and their parts.** • **Introducing students to the agricultural tractor engine, the engine parts, and the functions of each part.** • **Introducing students to different agricultural machines.**
9. Teaching and Learning Strategies	
Strategy	**1 - Interest and active participation in the study site (classroom), evidence of the student's commitment and responsibility** **2 -Adherence to the specified timings for submitting reports, homework assignments, and research required of the student to submit.** **3 -Semester and final tests that express the student's interest in cognitive and skill achievement** **4 - Seminars and mini-discussion sessions and their role in localizing the student's scientific knowledge in the subject of the study**

10. Course Structure					
Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation
The first	2	Types of agricultural pullers	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The second	2	Devices and means of transporting power in agricultural tugs	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The third	2	The tug engine, its fixed and moving parts and their functions	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The fourth	2	Auxiliary devices attached to the tug engine	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The fifth	2	Exam1			
The sixth	2	Gear box and separator ((kilogram	Agricultural equipment and machinery/theoreti	Lecture and presentation	Quarterly exam +Quiz +
The seventh	2	Engine cooling system	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The eighth	2	Fuel system	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports
The ninth	2	Oil and fuel cleaners (filters)	Agricultural equipment and machinery/theoretical part	Lecture and presentation	Quarterly exam +Quiz + reports

The tenth	**2**	**Soil preparation machines for primary treatments (tillage machines.(Dump tillage machines**	**Agricultural equipment and machinery/theoretical part**	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The eleventh	**2**	**Digger plow Rotary plow**	**Agricultural equipment and machinery/theoretical part**	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The twelveth	**2**	**Soil preparation machines for secondary treatments - smoothing combs Special equipment**	**Agricultural equipment and machinery/theoretical part**	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The Thirteenth	**2**	**Seedling and cultivation machines (seeds) and fertilization machines**	**Agricultural equipment and machinery/theoretical part**	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The fourteenth	**2**	**Harvesting machines Combined grain harvester Cut potatoes and sugar beets**	**Agricultural equipment and machinery/theoretical part**	**Lecture and presentation**	**Quarterly exam +Quiz + reports**
The Fifteenth		**Exam2**			

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. Homework: 15% Daily exam: 15% Written exam : 50% Scientific reports: 20%
12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**No**

Main References (Sources)	**الميكنة الزراعية ، د. محمد سيد عمران ، د. كمال محمد نافع. 2009.** **FMO. (1984) Fundamentals of Machine Operation. John Deere Service Training Dept., Moline, Illinois. USA.**
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	**http://www.Lab Safety Supply - EZ Facts Safety Info - Document #221, Proper Lifting Techniques.htm**

Course Description Form

1. Course Name:
Agricultural mechanization equipment / practical part
2. Course Code:
AGEQ232
3. Semester / Year:
First semester 2024-2025 / second stage
4. Description Preparation Date:
2-1-2025
5. Available Attendance Forms:
I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total)
3/ 3.5

7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Qusay Samir Sabah Email: qusay.sameer@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Identify the types of agricultural tractors and their parts. • Introducing students to the agricultural tractor engine, the engine parts, and the functions of each part. • Introducing students to different agricultural machines.
9. Teaching and Learning Strategies	
Strategy	.Education strategy collaborative concept planning .Brainstorming education strategy . Education Strategy Notes Series.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation
The first	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	• Identify the types of agricultural tractors	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports

The second	**2**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**View the devices • and parts of the tug and the means of transporting power in the agricultural tug**	**Lecture with explanation and presentation,**	**Quarterly exams + Quiz + reports**
The third	**2**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Watch the tug engine and learn about its fixed and moving parts and their functions**		**Quarterly exams + Quiz + reports**
The fourth	**2**	**To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**Identify the auxiliary devices attached to the tug engine**	**Lecture with explanation and presentation,**	**Quarterly exams + Quiz + reports**

The fifth	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	See the gear • ,box, the separator the differential device, and the final reduction device and how they work vic	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The sixth	2		Exam 1		
The seventh	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson	See the gear box, the separator, the differential device, and the final reduction device	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The eighth	2	To be able to understand and assimilate the theoretical	Watch the • Engine lubrication system and how to	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The ninth	2	To be able to understand and assimilate the theoretical	Watch the • engine cooling system and how it works	Lecture with explanation and presentation	Quarterly exams + Quiz + reports

The tenth	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the	Identify the • fuel system and how it works	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The eleventh	2	To be able to understand and assimilate the theoretical	Identify the • types of oil and fuel cleaners (filters)	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The twelveth	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	• Identifying the machines for preparing the soil for primary treatments (dump plowing machines), their installation and organization of their parts, plowing methods with them, and how to maintain them	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The Thirteenth	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the	• Watch the excavator and rotary plow, their plowing methods, and how their parts are organized	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports
The fourteenth	2	To be able to understand and assimilate the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam	Identifying the parts of soil preparation machines for secondary treatments - smoothing combs, special equipment, how to prepare them for work, and methods of organizing and maintaining them.	Lecture with explanation and presentation,	Quarterly exams + Quiz + reports

The Fifteenth		**Exam2**	----------	----------	----------

11. Course Evaluation	
Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	**Agricultural mechanization. For .1 agricultural secondary school classes. The Egyptian Arabic Republic . 2009** **2 .Tractors and agricultural machinery for agricultural professional institutes. Republic of Yemen . 2010**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**no**

Theoretical Course Description

1. Course Name:
Statistics/ Theoretical
2. Course Code:
STAT224
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms

6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Sundus Abdulkariem Mohammed Email: sundus.mohammed@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	-Teaching students the principles of biostatistics -Teaching students statistical methods for tabulating and analyzing data Teaching students ways to understand the outputs of statistics -Teaching students how statistics are used in analysis and scientific research.
9. Teaching and Learning Strategies	
Strategy	Weekly lectures include an explanation of the theoretical basis of variance analysis and its practical application, homework assignments, and printed lectures to be accessible to students at any time.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	Learn about statistics, the	Introduction,nature of data and	Explanation of the topic	Quiz
Second	2 hours	Learn about ways to display and tabulate data	Tabular presentation and graphical representation	Explanation of the topic With practical application	Quiz

Third	2 hours	Learn how to create frequency distribution tables.	Frequency distribution tables.	Explanation of the topic With practical application	Quiz
Fourth	2 hours	Learn about the measures of Measures of Central Tendency and how to calculate them	Measures of Central Tendency	Explanation of the topic With practical application	Quiz
Fifth	2 hours	Learn about the properties of the arithmetic mean and how to prove each property with examples. Median – Mode	Properties of the arithmetic mean, Median - Mode	Explanation of the topic With practical application	Quiz
Sixth	2 hours	None	First Monthly Exam	None	None
Seventh	2 hours	Learn about dispersion measures and their types.	Dispersion measures - absolute dispersion measures.	Explanation of the topic With practical application	Quiz
Eighth	2 hours	Learn about the properties of variance and how to prove each property with examples. Learn how to calculate the coefficient of variation and the standard degree.	Properties of variance – Measures of relative dispersion -Standard degree	Explanation of the topic With practical application	Quiz s
Ninth	2 hours	Understanding the Principles of Probability, Permutations, and Combinations	Principles of Probability – Combinations and Permutations	Explanation of the topic With practical application	Quiz

Tenth	2 hours	Understanding the laws of probability	Probability laws	Explanation of the topic With practical application	Quiz
Eleventh	2 hours	None	First Monthly Exam	None	None
Twelfth	2 hours	Understanding the normal distribution, its properties, and probability distributions	Normal distribution	Explanation of the topic With practical application	Quiz
Thirteenth	2 hours	Understanding Statistical Hypotheses and Hypothesis Testing	Statistical Hypotheses	Explanation of the topic With practical application	Quiz
Fourteenth	2 hours	Learn about the Z-test, its usefulness, and how to calculate it	Z- test	Explanation of the topic With practical application	Quiz
Fifteenth	2 hours	Learn about the t-test, its usefulness, and how to calculate it	**t- test**	Explanation of the topic With practical application	Quiz

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)	Introduction to Statistics, by Dr. Khasha' Mahmoud Al-Rawi, College of Agriculture
Main References (Sources)	Lectures prepared by the course lecturer.
Recommended Books and References (Scientific Journals, Reports...)	None

Electronic References, Websites	None

Practical Course Description

1. Course Name:
Statistics/ Practical
2. Course Code:
STAT224
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Khawla Dawood Gatie Email: khawla.dawood@uobasrah.edu.iq
8. Course Objectives

Course Objectives	-Teaching students the principles of biostatistics -Teaching students statistical methods for tabulating and analyzing data -Teaching students ways to understand the outputs of statistics -Teaching students how statistics are used in analysis and scientific research

9. Teaching and Learning Strategies

Strategy	Weekly lectures include an explanation of the theoretical basis of variance analysis and its practical application, homework assignments, and printed lectures to be accessible to students at any time.

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Learn about statistics, the nature of data, and statistical symbols	Introduction ,nature of data and statistical symbols	Explanation of the topic With practical application	Quiz
Second	3 hours	Learn about ways to display and tabulate data	Tabular presentation and graphical representation	Explanation of the topic With practical application	Quiz

Third	3 hours	Learn how to create frequency distribution tables.	Frequency distribution tables.	Explanation of the topic With practical application	Quiz
Fourth	3 hours	Learn about the measures of Measures of	Measures of Central Tendency	Explanation of the topic With	Quiz
Fifth	3 hours	Learn about the properties of the arithmetic mean and how to prove each property with examples. Median – Mode	Properties of the arithmetic mean, Median - Mode	Explanation of the topic With practical application	Quiz
Sixth	3 hours	None	First Monthly Exam	None	None
Seventh	3 hours	Learn about dispersion measures and their types.	Dispersion measures - absolute dispersion measures.	Explanation of the topic With practical application	Quiz

Eighth	3 hours	Learn about the properties of variance and how to prove each property with examples. Learn how to calculate the coefficient of variation and the standard degree.	Properties of variance – Measures of relative dispersion -Standard degree	Explanation of the topic With practical application	Quiz
Ninth	3 hours	Understanding the Principles of Probability, Permutations, and Combinations	Principles of Probability – Combinations and Permutations	Explanation of the topic With practical application	Quiz
Tenth	3 hours	Understanding the laws of probability	Probability laws	Explanation of the topic With practical	Quiz
Eleventh	3 hours	None	First Monthly Exam	None	None
Twelfth	3 hours	Understanding the normal distribution, its properties, and probability distributions	Normal distribution	Explanation of the topic With practical application	Quiz
Thirteenth	3 hours	Understanding Statistical Hypotheses and Hypothesis Testing	Statistical Hypotheses	Explanation of the topic With practical application	Quiz

Fourteenth	3 hours	Learn about the Z-test, its usefulness, and how to calculate it	Z- test	Explanation of the topic With practical application	Quiz
Fifteenth	3 hours	Learn about the t-test, its usefulness, and how to calculate it	**t- test**	Explanation of the topic With practical applicatio n	Quiz

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)	Introduction to Statistics, by Dr. Khasha' Mahmoud Al-Rawi, College of Agriculture
Main References (Sources)	Lectures prepared by the course lecturer.
Recommended Books and References (Scientific Journals, Reports...)	None
Electronic References, Websites	None

1. Course Name:
Principle lf microbiology
2. Course Code:
MICB218
3. Semester / Year: second semester
2024-2025
4. Description Preparation Date:

2025	
5. Available Attendance Forms:	
Attending college within practical Classification laboratory	
6. Number of Credit Hours (Total) / Number of Units (Total):	
Number of Credit Hours is 5 hours /3.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Elham Kadhim Nasser **elham.nasser@uobasrah.edu.iq**	
8. Course Objectives	
Course Objectives	• Introducing students to the different aspects of microorganisms, starting with bacteria, fungi and viruses • Familiarity with all information related to microbiology Giving the student a clear picture of the basics and diversity in the science of microorganisms and the importance of these organisms and their impact on the environment
9. Teaching and Learning Strategies	

Strategy	The curriculum includes teaching both theoretical and practical scientific knowledge related to microbiology. It covers the historical background and early development of microbiology, the nature and characteristics of microorganisms, their classification and taxonomy, and their significance. The course also explores the cellular features of microorganisms, highlighting similarities and differences among them, as well as the diversity of their forms, growth, and reproduction. Furthermore, it addresses the factors affecting microbial growth, methods of inhibiting or killing microorganisms, and techniques for estimating the growth of unicellular organisms. The curriculum also provides foundational knowledge on the classification of bacteria and offers an overview of microorganisms in air, soil, water, sewage, and food. The Curriculum Includes Teaching Scientific And Practical Information In Terms Of Identifying The Historical Information Of The Beginnings Of Microbiology And Identifying The Nature And Properties Of Microbiology. Division And Classification Of Microorganisms And Their Importance, Characteristics Of Cellular Microorganisms, The Similarities And Differences Between Them And The Diversity Of Their Forms, Growth And Reproduction, Factors Affecting Growth And Ways To Stop Their Activity And Kill Them, Methods For Estimating The Growth Of Single-Celled Organisms, Basics Of Bacteria Classification, An Idea About Microorganisms In Air, Soil, Water And Sewage And Food.

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**	**The student should be able to understand and comprehend the theoretical ,Practical material.The student pass daily and monthly exams**	Definition of microbiology and its stages of development	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussion and Questions**

2	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Morphological properties of microorganisms	**-Theoretical Lecture -Presentation -Group Discussion**	**Weekly Quiz**
3	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	The basic parts of bacteria	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussio n and Questions**
4	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Non-main parts of bacteria	**-Theoretical Lecture -Presentation -Group Discussion**	**Lecture Report**

5	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Bacterial growth and physical factors affecting growth	**-Theoretical Lecture -Presentation -Group Discussion**	**Weekly Quiz**
6			**First exam**		
7	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Morphology of Fungi	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussio n and Questions**
8	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Morphology of yaest	**-Theoretical Lecture -Presentation -Group Discussion**	**Weekly Quiz**

9	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Morphology of Algae	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussio n and Questions**
10	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Viruses	**-Theoretical Lecture -Presentation -Group Discussion**	**Lecture Report**
11	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	Control of Microbial Growth	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussio n and Questions**
12	**2**	**The student should be able to understand and comprehend the theoretical, Practical material. The student pass daily and monthly exams**	nutrition of microorganism	**-Theoretical Lecture -Presentation -Group Discussion**	**Oral Discussio n and Questions**

13			**Second exam**	**.**	
11. Course EvaluationExams Reading Checks					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)	**None**				
Main References (Sources)	**1- Fundamentals of microbiology 2- foundations of microbiology**				
Recommended Books and References (Scientific Journals, Reports...)	**None**				
Electronic References, Websites	**None**				

Course Description

1. Course Name:
Principle lf microbiology / Theoretical
2. Course Code:
MICB218
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Elham Kadhim Nasser E mail: Elham.nasser@uobasrah.edu.iq

8. Course Objectives	
Course Objectives	**1. To familiarize students with the correct use and handling of laboratory equipment, particularly the light microscope.** **2. To train students in methods of preparing and staining microbial samples (e.g., simple staining, Gram staining).** **3. To develop students' skills in aseptic techniques to prevent contamination during microbial handling.** **4. To enable students to culture and isolate microorganisms from various sources (air, water, soil, and food).** **5. To identify different microbial morphologies through observation and differential staining techniques.** **6. To evaluate microbial growth under various environmental conditions and assess the impact of physical and chemical agents.** **7. To quantify microbial populations using methods such as serial dilution and colony count.** **8. To interpret laboratory findings and write structured scientific reports based on observations and results.**
9. Teaching and Learning Strategies	

Strategy	**1. Collaborative Learning:** **Students are divided into small groups to perform lab experiments collaboratively, encouraging peer interaction and teamwork skills.** **2. Inquiry-Based Learning:** **Learners are encouraged to ask questions, formulate hypotheses, and design simple experiments to explore microbiological concepts.** **3. Observation-Based Learning:** **Students develop their observational skills by examining live or fixed specimens under the microscope and recording precise findings.** **4. Experiential Learning:** **Hands-on practice includes media preparation, staining techniques, culture methods, and microbial count, promoting applied understanding.** **5. Direct Instruction:** **Detailed procedural instructions and safety protocols are provided to guide students during lab activities.** **6. Use of Visual Aids (Videos & Presentations):** **Educational videos and illustrated slides are used to support understanding of complex lab procedures.** **7. Formative Assessment:** **Ongoing evaluations are conducted through lab performance, practical reports, and oral questioning to provide feedback and improve skills.**

10. Course Structure

Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
First	3hours	**1.**Use basic lab tools to identify and handle microbes.	**General introduction to review the key aspects of the**	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	3 hours	**1.**Use basic lab tools to identify and handle microbes.	**Culture media**	• Theoretical lecture • Presentation • discussion	Report on the most suitable and locally used
Third	3 hours	**1.**Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and **examine microorganisms**	**Cultivation of Some Microorganisms**	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions

Fourth	3 hours	**1.**Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and **examine microorganisms**	**Simple staining**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	3 hours	1.Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and examine microorganisms	**Gram staining**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	3 hours	**1.**Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and **examine microorganisms**.	**microscope**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	3 hours	None	First Monthly Exam	None	None

Eighth	3 hours	**1.**Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and **examine microorganisms**	**Serial dilution method**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	3 hours	**1.**Use basic lab tools to identify and handle microbes. 2.Apply safe techniques to grow and **examine microorganisms**	**Colony count method (cfu)**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	3 hours	Students will be able to identify the basics of operating a biofloc system.	**Main sterilization methods**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc

Eleventh	3 hours	Students will be able to identify the engineering aspects of automated feeding systems.	**Microbial growth phases**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	3 hours	Students will be able to identify methods and equipment for transporting live fish.	**Environmental Factors Affecting Microbial Growth**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Thirteenth	3 hours	Students will be able to learn the basics of monitoring devices and follow up on the specifications of the water used for cultivation.	**Microbial control**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Fourteenth	3 hours	None	Second Monthly Exam	None	None
Fifteenth	3 hours	None	General Review	• Group discussion • Answering students' questions	None

11. Course Evaluation

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

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	None

Main References (Sources)	Ivar L.O. 2013. Aquaculture Engineering. John Wiley & Sons, Ltd.
Recommended Books and References (Scientific Journals, Reports...)	Misra R. and Dora K.C. 2015. A text Book on Aquaculture Engineering, Narendra
Electronic References, Websites	https://www.fao.org/fishery/ar

Course Description Form

1. Course Name:	
Farm management	
2. Course Code:	
FAMA244	
3. Semester / Year:	
2024- 2025	
4. Description Preparation Date:	
2025	
5. Available Attendance Forms:	
Attending college within practical Classification laboratory	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 / 3.5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: **Khawla Rashige Hassan/khawla.hassan@uobasrah.edu.iq**	
8. Course Objectives	
Course Objectives	Introducing the economic principles that are used in managing agricultural projects and organizing records with the aim of increasing efficiency for the product and the project
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	Unit or Subject	Practical	Learning Method	Evaluation Method
1	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Introduction to management and production	Extinction and methods of calculating it	Lecture with explanation and presentation.	Display Screen + field.
2	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Economic efficiency	Preparing farm maps	Lecture with explanation and presentation	Display Screen + field.
3	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	The principle of equal marginal returns	Preparing farm maps	Lecture with explanation and presentation	Display Screen + field.

4	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**The principle of the best level of production**	**Establishment of farms**	**Lecture with explanation and presentation**	**Display Screen + field.**
5	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**The principle of substitution or replacement**	**Management of production elements**	**Lecture with explanation and presentation**	**Display Screen + field.**
6	**3**	**----------**	**Exam**	**Exam**	**Lecture with explanation and presentation**	**Display Screen + Seed sample**
7	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Farm management methods**	**Types of farm work**	**Lecture with explanation and presentation**	**Display Screen + laboratory**

8	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Farm records**	**Managing work efficiently**	**Lecture with explanation and presentation**	**Display Screen + field.**
9	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Linear programming**	**Common errors in farm records**	**Lecture with explanation and presentation**	**Display Screen + field.**
10	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Risk Management**	**Land evaluation methods**	**Lecture with explanation and presentation**	**field.**
11	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and**	**Opportunity cost principle**	**Efficient capital management**	**Lecture with explanation and presentation**	**Display Screen + field.**

12	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Full and partial budget**	**The trade-off between owning and renting machines**	**Lecture with explanation and presentation**	**Display Screen + Fertilizer sample**
13	**3**		**Exam**	**Exam**	**Lecture with explanation and presentation**	**Display Screen + field.**

	11. Course Evaluation
	Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc.
	12. Learning and Teaching Sources
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	إدارة المزارع/ هاشم علوان السامرائي
Recommended Books and References (Scientific Journals, Reports...)	إدارة المزارع/د.روضة أبو العينين
Electronic References, Websites	agro-lib.site/2021/04/blog-post_332.html

Theoretical Course Description

1. Course Name:
(Agricultural extension) - The second Stage - Department of Field Crops - College of Agriculture - University of Basrah

2. Course Code:
AGEX213
2. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
. Available Attendance Forms: Attending college within practical microbiology laboratories
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Email: : abdulameer.obaid@uobasrah.edu.iq Dr.Abdulameer Raheem Obaid :
8. Course Objectives

Course Objectives	**Learn about agricultural extension science** • **agricultural community and how to apply them**

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

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
First	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**Agricultural extension and its impact on the development of rural communities**	• **Lecture with explanation in presentation**	**Display**
Second	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**The role of agricultural extension in development and combating underdevelopment Agricultural extension – phylsophy and objective**	• **Lecture with explanation in presentation**	**Display**
Third	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**Agricultural extension – phylsophy and objective**	• Lecture with explanation in presentation	**Display**

Fourth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**General principles of agricultural extension**	**Lecture with explanation in presentation**	**Display**
Fifth	2 hours		**Exam1**		
Sixth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**Agricultural extension activity and its development The different factors watch effect of Agricultural extension**	**Lecture with explanation in presentation**	**Display**

Seventh	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**Agricultural Extension Systems and Organizations**	**Lecture with explanation in presentation**	**Display**
Eighth	2 hours	. **To be able to understand and comprehend**	**Types of Agricultural extension**	**Lecture with explanation in presentation**	**Display**
Ninth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**Characteristics of an agricultural guide**	**Lecture with explanation in presentation**	**Display**

Tenth	2 hours	**To be able to understand and comprehend the material according to my theory. The ability to repeat the material for the next daily and monthly**	**agricultural advisor qualifications**	**Lecture with explanation in presentation**	**Display**
Eleventh	2 hours	**To be able to understand and comprehend**	**Duties and duties of an agricultural guide**	**Lecture with explanation in presentation**	**Display**
Twelfth	2 hours	**. To be able to understand and comprehend**	**Program planning and evaluation**	**Lecture with explanation in presentation**	**Display**
Thirteenth	2 hours	**. To be able to understand and comprehend**	**Principles of planning guidance programs**	**Lecture with explanation in presentation**	**Display**
Fourteenth	2 hours		**Exam2**		
Fifteenth	2 hours	None		•	None

11. Course Evaluation

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

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**Agricultural extension, part 2 Dr . Abbas Abdul Mohsen**
Main References (Sources)	**No**

Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
Irrigation and drainage	
2. Course Code:	
IRDR215	
3. Semester / Year: 2024-2025	
Second semester \ second stage	
4. Description Preparation Date:	
2-1-2025	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5. hours (2 Theoretical and 3 practical) 3units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Dr. Yahya jihad shabeeb	**mail : yahia.shabib@uobasrah.edu.iq**
8. Course Objectives	
Course Objectives	**• importance of the issue of field irrigation and drainage from the agricultural and engineering side for the purpose of identifying the best steps and methods for calculating irrigation and drainage requirements and the most important characteristics related to soil, plants and environmental conditions in order to reach the best use of water resources and increase the efficiency of use of irrigation water and preserve the soil and its properties from deterioration.**
9. Teaching and Learning Strategies	

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

Strategy	**In-person lectures for 15 weeks, including two monthly exams and daily exams**
10. Course Structure	

1	**5**	**The concept of irrigation, irrigation old and new**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
2	**5**	**sources of irrigation water. Irrigation water quality**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
3	**5**	**Physical properties of soil related to irrigation**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

4	**5**	**Water-soil relationship, soil moisture constants, water movement in soil, water tip**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
5	**5**	**Exam1** **----------**	**----------**	**----------**	**----------**
6	**5**	**Plant water consumption Measuring water**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
7	**5**	**Water requirements and irrigation scheduling**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**

8	**5**	**Transmission and distribution of irrigation water, movement of water in pipes and open channels**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
9	**5**	**modern irrigation methods**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
10-11	**5**	**The concept of drainage, the justification for the establishment of drains, the relationship of drainage to plant growth and productivity**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**

12	**5**	**Drainage and soil salinity, leaching requirements and salt balance**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
13	**5**	**Types of drains, their classification, and the objectives of their establishment**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
14	**5**	**Designs of open and covered drains systems and calculating the distances between drains**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
15	**5**	**Exam2**	----------	----------	----------

1	**5**	**Survey the land and draw a contour map**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
2	**5**	**Measuring levels and calculating the amount of excavation and backfilling for an irrigation channel**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
3	**5**	**Measuring soil moisture**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
4	**5**	**Measuring water in different ways. raft, weir, manhole, parachal channel, drain pumps.**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**

5	**5**	**Exam1**			
6	**5**	**applications in calculating water consumption. Crop Wat application in ET0 acc gauge water tip ount**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
7	**5**	**applications in calculating the water needs of plants**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
8	**5**	**applications in calculating the amount of water and irrigation periods**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
9	**5**	**applications in calculating the adequacy, efficiency and consistency of irrigation water distribution**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

10	**5**	**Design of the canals: an earthen irrigation canal. Lined irrigation channel**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
11	**5**	**Investigations required for the construction of drains, exploratory and operational investigations**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
12	**5**	**Measurement of saturated hydraulic conductivity in the laboratory and field**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
13	**5**	**open drains design and closes**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

14	**5**	**Designs of open and covered drains systems**	**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**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
15	**5**	**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)	**Irrigation, its basics and applications, written by Dr. Nabil Ibrahim Al-Tayef and Dr. Issam Khudair Hamza Al-Hadithi, 1988, Ministry of Higher Education and Scientific Research - University of Baghdad** **Irrigation and drainage, written by . Dr. Laith Khalil Ismail, 2000, Ministry of Higher Education and Scientific Research .- University of Mosul** **Design and Management of Field Irrigation Systems, written by Dr. Samir Muhammad Ismail, 2002, Faculty of .Agriculture - Alexandria University** **Modern irrigation technologies and other topics in the water issue, written by Dr. Issam Khudair Al-Hadithi, Dr. Ahmed Madloul Al-Kubaisi, and Dr. Yas Khudair Hamza Al-Hadithi, 2010, Ministry of Higher Education and Scientific Research - Anbar University**
Main References (Sources)	**No**
Recommended Books and References (Scientific Journals, Reports...)	**Iraqi academic scientific journals**

Electronic References, Websites	**oil Science Society Of America Library Genesis**

Course Description Form

1. Course Name:	
(Oil and sugar crops) - Second stage - Field Crops Department - College of Agriculture - University of Basra	
2. Course Code:	
OSCR214	
3. Semester / Year:	
The Second course –Second stage(-2024-2025)	
4. Description Preparation Date:	
4/ 2/ 2025	
5. Available Attendance Forms:	
My presence in Hall No. 3- I attend full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours per week - 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Zainab Ahmed Abdul- Razaq Email: zainab.ahmed@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	**• Providing students with theoretical and applied information in the field of cultivation and production of major oil crops, as well as the characteristics and aspects of oil manufacturing.** **• Providing students with theoretical and applied information in the field of cultivation and production of the main sugar crops, as well as the processes of sugar extraction and manufacturing.**

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Definition of oil crops, the importance of oil crops, production of oil crops, trade in fats and oils, sources of oils and fats	Lecture with explanation and presentation	Discussions and questions
2	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Physical and chemical properties of oils and fats. Components of oils, fatty acids, glycerides, Partition of oils and fats, composition and representation of oils and fats in crops	Lecture with explanation and presentation	Discussions and quiz
3	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Methods of extracting oils and fats. Problems and obstacles to the cultivation and production of oil crops and means of overcoming them	Lecture with explanation and presentation	Discussions and questions

4	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Study of oil crops Sesame, sunflower (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting) Peanut, soybean (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting)..**	**Lecture with explanation and presentation**	**Quiz and reports**
5	**2**		**Exam1**		
6	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Rape and mustard (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting).**	**Lecture with explanation and presentation**	**Discussions and questions**

7	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Safflower, (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting).**	**Lecture with explanation and presentation**	**Quiz**
8	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Cotton and flax (English and scientific name and family, economic importance - habitat - environmental conditions - soil and crop service processes - harvesting).**	**Lecture with explanation and presentation**	**Discussions and questions**
9	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**A scientific visit to one of the fields affiliated with the Basra Agriculture Directorate to see some of the cultivated oil crops.**		
10	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Sugar crops Introduction (a brief overview of the history of sugar crops in general)**	**Lecture with explanation and presentation**	**Discussions and questions**

11	2	Knowledge and understanding, brainstorming and mental	Sugarcane (English and scientific name and family(A brief overview of the plant's development and its original habitat.	Lecture with explanation and presentation	Discussions and questions
12	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Suitable soil, planting time - seed quantity - factors .affecting cuttings Crop service operations (irrigation - fertilization)	Lecture with explanation and presentation	Quiz
13	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Sugar beet (English and (scientific name and family Introduction to the development of the sugar beet plant - the original habitat - economic importance and geographical distribution - sugar extraction and oil development.	Lecture with explanation and presentation	Discussions and questions
14	2	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Plant climatic needs Agricultural operations (suitable soil - planting time - planting method.(Suitable conditions for seed germination - seed quantity - agricultural cycle Crop service operations (thinning operations, weeding, fertilization, harrowing and uprooting(	Lecture with explanation and presentation	Discussions and questions
15	2		Exam2		
11. Course Evaluation					
The final exam consists of 50 theoretical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.					
12. Learning and Teaching Sources					

Required Textbooks (Curricular Books, If Any)	**Oil and sugar crops (Dr.. Tawakkol Younis Rizk Dr. Hikmat Abdul Ali) Oilseeds Tayfour, Hussein Awni and Rizgar Hamdi Rashid (1990). Ministry of Higher Education and . Scientific Research, University of**
Main References (Sources)	**No**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Practical Oil and sugar crops
2. Course Code:
OSCR214
3. Semester / Year:2024 -2025
Second Semester- Second stage
4. Description Preparation Date:
1-3-2025
5. Available Attendance Forms:
Attending college within practical Jungle laboratory + field.- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total):
3/ 3.5-5
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Sundus kamil jabbar	Email: sundus.jabar@uobasrah.edu.iq

8. Course Objectives	
Course Objectives	Introducing students to oil and sugar crops and their importance, knowing the botanical description of each crop, how oils and sugars are formed in seeds, and laboratory extraction of vegetable oils.

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Definition of field crops - division of field crops - definition of oil crops - how oil is formed in plant seeds and the composition of oils and fatty acids	Lecture with explanation and presentation.	Daily and weekly tests
2	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Introduction to the Soxolite device (a device for extracting oil from seeds), its history, parts, and how to extract oil	Lecture with explanation and presentation	Daily and weekly tests

3	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Sunflower and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
4	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills,**	**Corn(Maize) crop and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
5	**3**	**-------**	**Exam1**	**------**	**----------**
6	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**Soybean and its botanical description** **Peanut and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
7	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**Safflower and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
8	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**Rapesed and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests

9		----------	**A scientific visit to one of the fields affiliated with the Basra Agriculture Directorate to see some of the cultivated oil crops.**	----------	---------
10	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**Cotton and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
11	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**Flax crop and its botanical description**	**Lecture with explanation and presentation**	Daily and weekly tests
12	**3**	**To be able to understand and comprehend scientific information and the ability to distinguish**	**View live samples of some oil crops and identify their seeds**	**Field** =	Daily and weekly tests

13	**3**	**To be able to understand and** comprehend scientific information and the ability to distinguish	**Sugar plants (sugarcane) and its botanical description**	**Lecture with explanation and presentation**	**Daily and weekly tests**
14	**3**	**To be able to understand and comprehend scientific information he and ability to distinguish**	**Sugar beet yield and its botanical description**	**Lecture with explanation and presentation**	**Daily and weekly tests**
15	**-**	**-**	**Exam2**	**-**	**-**

11. Course Evaluation
The final exam consists of 50 Practical exams, 10 for each monthly exam, 5 POM exams, and 5 reports.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**Oil and sugar crops**
Main References (Sources)	**Oil and sugar crops (Dr.. Tawakkol Younis Rizk Dr. Hikmat Abdul Ali). Oilseeds Tayfour, Hussein Awni and Rizgar Hamdi Rashid (1990).**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:

Land Reclamation
2. Course Code:
LARE316
3. Semester / Year:
First semester \ third stage2024-2025
4. Description Preparation Date:
5-2-2025
5. Available Attendance Forms:
Attending full time
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours -3.5-5
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 ability to discriminate	Reclamation of Saline Soils	Lecture with explanation presentation	daily exam
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	Reclamation of calcareous soils	Lecture with explanation presentation	daily exam

		ability to discriminate			
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 assimilate scientific information and the ability to discriminate**	**Reclamation of sandy and desert soils**	**Lecture with explanation presentation**	**daily exam**
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**	**Reclamation of Saline Soils Lands that need**	**Lecture with explanation**	**daily exam**

		assimilate scientific information and the ability to discriminate	**reclamation**	**presentation**	
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:
First semester \ Thrid stage
4. Description Preparation Date:
5-2-2025
5. Available Attendance Forms:

Attending full time					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3hours					
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	**3**	**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	**3**	**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	**3**	**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	**3**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Implementing a saline soil reclamation program Specifications of water pumps**	**Lecture with explanation presentation**	**daily exam**
5	**3**		**Exam1**		
6	**3**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Irrigation channels**	**Lecture with explanation presentation**	**daily exam**
7	**3**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Reclaimed land management**	**Lecture with explanation presentation**	**daily exam**
8	**3**	**To be able to understand and assimilate scientific information**	**Reclaimed land management**	**Lecture with explanation presentation**	**daily exam**

		and the ability to discriminate			
9	**3**	**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	**3**	**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	**3**	**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	**3**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Reclamation of flooded lands**	**Lecture with explanation presentation**	**daily exam**

14-13	**3**	**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	**3**		**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**			
			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:2024- 2025
First semester- third stage

4. Description Preparation Date:					
12- 4-2025					
5. Available Attendance Forms:					
In presence- full time					
6. Number of Credit Hours (Total) / Number of Units (Total):					
5 / 3.5					
7. Course Administrator's Name					
م.د. خولة داود كاطع 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:2024- 2025
First semester- third stage

4. Description Preparation Date:					
14- 4-2025					
5. Available Attendance Forms:					
In presence- full time					
6. Number of Credit Hours (Total) / Number of Units (Total):					
5 / 3.5					
7. Course Administrator's Name					
Name: 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	**3**	**Introduction to Statistics (examples)**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the**	**a lecture with an explanation, a presentation,**	**discussion**
2	**3**	**Examples of Measures of dispersion and centering**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work**
3	**3**	**Statistical procedures for agricultural research. Examples and Introduction to agricultural experiment design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**discussion**
4	**3**	**Completely Randomized Design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work and discussion**

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

9	**3**	**Examples of Latin square design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work and discussion**
10	**3**	**Examples of missing value estimation in Latin square design**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation,**	**discussion**

11	**3**	**Examples of the Latin Square Design for Mean Testing**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the**	**a lecture with an explanation,**	**Class room work**
12	**3**	**The relative efficiency of the Latin square design compared to the completely random design and the block design (Examples)**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**Class room work and discussion**
13	**3**	**Examples of all designs**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and**	**a lecture with an explanation, a presentation,**	**discussion and quiz**
14	**3**	**Factorial Experiments**	**To be able to understand and comprehend the theoretical material and apply it in the practical lesson. The ability to repeat the material for the next daily and monthly exam**	**a lecture with an explanation, a presentation,**	**quiz**
15	**3**	**Second month exam**			

11. Course Evaluation	
The final exam is of 50 theoretical and practical of 20, 10 for each monthly exam, 5 POM exam, and 5 reports.	
12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	**design and analysis of agricultural experiments**
Main references (sources)	**Principles of Statistics.** **design and analysis of agricultural experiments**
Recommended supporting books and references (scientific journals, reports...)	**Statistical procedures for agricultural research.**
Electronic references, websites	**Many resources**

Theoretical Course Description

1. Course Name:
FIELD CROP INSECT / Theoretical
2. Course Code:
CRIN312
3. Semester / Year:
Frist Semester / 2024-2025
4. Description Preparation Date:
17/04/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: 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 for the damage	**General insects: termites, locusts, mole criket**	• Theoretical lecture • Presentation • discussion	Report on the damage of these insects to field crop plants and other plants
Third	2 hours	**Students should be able to distinguish between different types of insects and their harmful roles on wheat and barley crops**	**Insects of the Poaceae family (wheat and barley)**	• Theoretical lecture • Presentation • Group discussion • Video presentations	**Discussion, oral questions and a short exam**
Fourth	2 hours	**Students will be able to identify economically important pests of the Poaceae family in Iraq.**	**Corn insects**	• Theoretical lecture • Presentation • Group discussion Video presentations	Earth pond design project
Fifth	2 hours	**Students should be able to distinguish between different insect species and their**	**Insects of the legume family**	• Theoretical lecture • Presentation • Group discussion Video presentations	Discussion and oral questions
Sixth	2 hours	**Students should be able to distinguish between**	**Sugar beet bugs**	• Theoretical lecture • Presentation • Group discussion Video presentations	Cage design project
Seventh	1 hours	None	First Monthly Exam	None	None

Eighth	2 hours	. Students should be able to distinguish between different insect species and their harmful roles on sesame, yarrow and tobacco crops	**Sesame, yellow and tobacco insects**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	**Students should be able to distinguish between different insect species and their harmful roles on different cotton crops**	**Cotton insect**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	. Students should be able to distinguish between different types of insects and their harmful roles on sunflower	**Sunflower Insects**	• Theoretical lecture • Presentation • Group discussion Video	Comparative report between closed culture systems, aquaponics and biofloc

Eleventh	2 hours	**Students should be able to distinguish between the**	**Warehouse Insects Part One**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Twelfth	2 hours	. Students should be able to distinguish between the different types of insects and their harmful roles on different warehouse insects	**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 organisms**	**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 / 2024-2025
4. Description Preparation Date:
18/04/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 3.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Raja Malik Khlaf Email: raja.khlaf@uobasrah.edu.iq
8. Course Objectives

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

9. Teaching and Learning Strategies

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	. **Students will be able to identify the basic aspects of field crop insects**	A general introduction to insects and their classification, pests and their types, harms and benefits of insects.	**Practical lecture • Presentation Group discussion • Display of insect models and images**	**Oral discussion and questions**

Second	3 hours	. **Students will be able to distinguish between beneficial and harmful insects and the economic importance of insects to field crops.**	. **General insects: termites, locusts, mole criket**	**Practical • lecture • Presentation Group • discussion • Display of insect models and images**	**Oral discussion and questions and requesting insect samples**
Third	3 hours	. **Students will be able to distinguish between important and less important pests that affect crops.**	**Insects of the Poaceae family (wheat and barley)**	Practical • lecture Presentation • Group • discussion • Display of insect models	**Discussion , oral questions, and a short exam**
Fourth	3 hours	. **Students will be able to identify economically important pests of the Poaceae family in Iraq.**	**Corn insects**	**Practical • lecture • Presentation Group • discussion • Display of**	**Oral discussion and questions and requesting insect**
Fifth	3 hours	.**none**	. **First month exam**	**None**	**none**
Sixth	3 hours	. **Students will be able to identify the most important pests that affect corn and the extent of their danger to this economic crop.**	. **Insects of the legume family**	**Practical • lecture • Presentation Group • discussion • Display of insect models and**	**Oral discussion and questions and requesting insect samples**
Seventh	3 hours	**Students will be able to identify the most important pests that affect the legume family and the extent of their danger to these economic crops.**	**sugar beet insects**	**Practical lecture • Presentation Group • discussion Display of •**	**Oral discussion and questions and requesting insect samples**

Eighth	3 hours	. **Students will be able to identify the most important pests that affect sugar beets and the extent of their danger to this economic crop.**	**Sesame, safflower and tobacco insects**	**Practical lectur • Presentation • Group discussion • Display of insect models and images**	**Oral discussion and questions**
Ninth	3 hours	**.none**	. **Second month exam**	**none**	**none**
Tenth	3 hours	**Students will be able to identify the most important pests that affect sesame, safflower, and tobacco and the extent of their danger to these field crops**	. **Cotton insects**	**Practical lectur • Presentation Group • discussion • Display of insect models and images**	**Discussion , oral questions, and bringing insect models**
Eleventh	**3 hours**	. **Students will be able to identify the most important pests that affect cotton and the extent of their danger to this economic crop.**	. **sunflower insects**	**Practical lectur • Presentation • Group discussion • Display of**	**Discussion , questions and a short quiz**
Twelfth	3 hours	**Students will be able to identify the most important pests that affect sunflowers and the extent of their danger to this economic crop.**	**Warehous Insects Part One**	**Practical lectur • Presentation • Group discussion • Display of insect**	**Oral discussion, questions, and bringing insect samples**
Thirteenth	3 hours	. **Students will be able to identify the most important pests that affect stored crops and the extent of their danger to them**	Warehouse Insects Part two	**Practical lectur • Presentation • Group discussion • Display of insect**	**Oral discussion, questions, and bringing insect samples**

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

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

Course Description Form

1. Course Name:
practical fodder crops – third stage - / College of Agriculture - University of Basrah
2. Course Code:
FOCR314
3. Semester / Year:
Second semester 2024-2025
4. Description Preparation Date:
2-1-2025
5. Available Attendance Forms: In presence
My presence
6. Number of Credit Hours (Total) / Number of Units (Total):
5 / 3.5
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:
fodder crops – third stage - / College of Agriculture - University of Basrah
2. Course Code:
FOCR314
3. Semester / Year:2024- 2025
Second semester 2024-2025
4. Description Preparation Date:
2-1-2025
5. Available Attendance Forms: In presence
My presence
6. Number of Credit Hours (Total) / Number of Units (Total): 5 / 3.5
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	3	Student's awareness of the importance of the lecture and the product	Terms and definitions	• Theoretical lecture • Presentation discussion	Discussion and oral questions
2	3	Student's awareness of the importance of the lecture and the product	The importance of forage crops .	• Theoretical lecture • Presentation discussion	Discussion and oral questions
3	3	Student's awareness of the importance of the lecture and the product	The importance of leguminous forage crops .	• Theoretical lecture • Presentation discussion	Discussion and oral questions
4	3	Student's awareness of the importance of the lecture and the product	Alfalfa crop	• Theoretical lecture • Presentation discussion	Discussion and oral questions

5	**3**	**Student's awareness of the importance of the lecture and the product**	**Egyptian alfalfa crop**	**• Theoretical lecture • Presentation discussion**	**Discussion and oral questions**
6	**3**	**Student's awareness of the importance of the lecture and the product**	**Sweet alfalfa and soybean crop**	**• Theoretical lecture • Presentation discussion**	**Discussion and oral questions**
7	**---------**	**Exam**	**----------**	**----------**	
8	**3**	**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	**3**	**Student's awareness of the importance of the lecture and the product**	**Oat crop**	**• Theoretical lecture • Presentation discussion**	**Discussion and oral questions**
10	**3**	**Student's awareness of the importance of the lecture and the product**	**Corn and sorghum crop**	**• Theoretical lecture • Presentation discussion**	**Discussion and oral questions**
11	**3**	**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	**3**	**Student's awareness of the importance of the lecture and the product**	**Feed mixtures**	**• Theoretical lecture • Presentation discussion**	**Discussion and oral questions**

13	**3**	**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	**3**	**Student's awareness of the importance of the lecture and the**	**Methods of estimating the condition of natural pasture**	**• Theoretical lecture • Presentation**	**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:
Legume Crops – Third stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
LECR313
3. Semester / Year:
2024- 2025
4. Description Preparation Date:
20-1-2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):
2
7. Course Administrator's Name
Name: Rawafid Hadi Al-obaidi Email:rawafid.qasim: **@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	**2**	**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	**2**	**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	**2**	**Intercropping**	**The student should understand the meaning and purpose of intercropping.**	**a lecture with an explanation, a presentation,**	**Oral discussion and questions**
4	**2**	**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	**2**	**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	**2**	**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		**None**	**First-month exam**	**none**	**Oral discussion and questions**
8	**2**	**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	**2**	**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	**2**	**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	**2**	**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	**2**	**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	**2**	**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	**2**	**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		**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:
Legume Crops practical – Third stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
LECR313
3. Semester / Year:
2024- 2025
4. Description Preparation Date:
20-1-2025
5. Available Attendance Forms:
Attendance in field
6. Number of Credit Hours (Total)
3 hours per week / 1.5 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	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.**	**Delivering theoretical and practical power point lectures and discussion groups**	**Daily and monthly tests**
2	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**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		**None**	**First-month exam**		**------**
8	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**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 / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Attendance in classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours per week / 2 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. 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 of rust	Diseases of wheat and barley.	•Theoretical lecture • Presentation	Discussion and oral questions
Eighth	2 hours	. Students will be able to identify and distinguish diseases based on	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 disease.	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**
Main References (Sources)	**Al-Haiti, Ayad Abdul-Wahid Muhammad and others (2021).. The**

Recommended Books and References (Scientific Journals, Reports...)	**.no**
Electronic References, Websites	**No**

Practical Course Description

1. Course Name:
Plant Diseases Practical / Practical
2. Course Code:
CRDS319
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
18/4/2025
5. Available Attendance Forms:
Attendance within the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
Three hours weekly / One and a half units (1.5
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**
First	**3**	**That the student becomes familiar with laboratory tools and safety procedures. General guidelines in the plant pathology laboratory**	**¦Practical lecture, presentation**	**• Practical lecture, presentation**	**Discussion and oral questions**
	3	**Wheat diseases with the preparation and examination of temporary microscopic slides of infected plants.**	**¦Practical lecture, presentation**	**• Practical lecture, presentation**	**Discussion and oral questions**

	3	**Wheat diseases with the most important symptoms and signs on infected plants in the laboratory**	**Practical lecture, presentation**	**• Practical lecture, presentation**	**Discussion and oral questions**
	3	**Barley diseases with the isolation of fungal pathogens from infected plant tissues.**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Rice diseases with the examination of isolated fungal**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**First Monthly Exam**	**Practical lecture, presentation**	**-**	**-**
	3	**Sorghum diseases with slide examination**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Maize diseases with slide examination**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**second Monthly Exam**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Sugarcane diseases with the identification of integrated plant**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Sunflower diseases with the identification of biological control**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Beet diseases with the identification of biological control**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**
	3	**Tobacco diseases with the identification of biological control**	**Practical lecture, presentation**	**Practical lecture, presentation**	**Discussion and oral questions**

	3	**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" لـ Agrios أو "Introduction to Plant Diseases" لـBrown).	

Theoretical Course Description

1. Course Name:
Seed technology / Theoretical
2. Course Code:
SETE318
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. 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	2 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 - Components of a	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 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	2 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	2 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	2 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	2 hours	None	First Monthly E	None	None
Seventh	2 hours	Students will be able to identify germination stimulants and inhibitors from .seed treatment	Germination stimulants and inhibitors Gibberellins - Cytokinins - Abscisic acid - Ethylene gas	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Eighth	2 hours	Students will be able to identify the stages of cultivar production and selection.	Seed production stages Production of a superior variety - Variety selection Initial propagation	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Ninth	2 hours	Students will be able to identify aspects and stages of maintaining genetic purity.	General principles of seed production - Aspects and stages of maintaining genetic purity	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	Learn about the importance of producing self-pollinated seeds.	Maintaining nucleus and breeder seeds for self-pollinating crops	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Eleventh	2 hours	Recognizing the importance of producing seeds for mixed-pollinated crops	Maintaining nucleus and breeder seeds for cross-pollinating crops Hybrid production	• 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 seed pests, their types, and their	Seed Pests Insects - Types - Living Conditions Fungi -	• Theoretical lecture • Presentation • Group	Discussion and oral questions
Fourteenth	2 hours	Students will be able to understand the storage	Storing Grain Seeds Storage	• Theoretical lecture • Presentation	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)	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 REFRENCE 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:
2024/2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
In the quality laboratory
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Khawla Dawood Gatie Email: khawla.dawood@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	**3**	**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	**3**	**Students' knowledge of classification levels**	Sampling.	Lecture with explanation and presentation	Sampling process

3	**3**	**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	**3**	**Students' knowledge of classification levels**	Hygiene check	Lecture with explanation and presentation	Practical
5			Assignment 1		
6	**3**	**Students' knowledge of classification levels**	Checking the moisture content of the seed	Lecture with explanation and presentation	Displaying samples
7	**3**	**Students' knowledge of classification levels**	Testing the electrical conductivity of the seed	Lecture with explanation and presentation	Discussion
8	**3**	**Students' knowledge of classification levels**	Testing the genetic purity of the seed	Lecture with explanation and presentation	Discussion
9		----------	Assignment 2	----------	----------
10	**3**	**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	**3**	**Students' knowledge of classification levels**	seed certification.	Lecture with explanation and presentation	Practical

12	**3**	**Students' knowledge of classification levels**	field inspection.	Lecture with explanation and presentation	Displaying sample forms
13			Assignment 3		
14		**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**

Course Description Form

1. Course Name:
English language– third stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
ENGL306
3. Semester / Year: 2024
Second semester – third stage
4. Description Preparation Date:2025
12-2-2025
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	Unit or Subject Name	Learning Method	Evaluation Method
1	**1**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Agriculture as terminology**	**a lecture with an explanation, a presentation,**	**Discussion**
2	**1**	**To be able to understand and assimilate scientific**	**Agriculture as an applied science**	**a lecture with an explanation, a presentation,**	**Discussion**

3	**1**	**To be able to understand and assimilate scientific**	**Water as general concept**	**a lecture with an explanation, a presentation,**	**Discussion**
4	**1**	**To be able to understand and assimilate scientific**	**Water and agriculture**	**a lecture with an explanation, a presentation,**	**Discussion**
5	**1**	**To be able to understand and assimilate scientific**	**Water and use in agriculture sector**	**a lecture with an explanation, a presentation,**	**Discussion, quiz**
6	**1**	**To be able to understand and assimilate scientific**	**Water and use in agriculture sector**	**a lecture with an explanation, a presentation,**	**Discussion**
7	**1**		**First-month exam**		
8	**1**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Environment and agriculture**	**a lecture with an explanation, a presentation,**	**Discussion**
9	**1**	**To be able to understand and assimilate scientific information and the ability to**	**Environment and agriculture**	**a lecture with an explanation, a presentation,**	**Discussion**
10	**1**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Important of fertilizers**	**a lecture with an explanation, a presentation,**	**Discussion**

11	**1**	**To be able to understand and assimilate scientific information and the ability to**	**Fertilizers classification**	**a lecture with an explanation, a presentation,**	**Discussion**
12	**1**	**To be able to understand and assimilate scientific information and the ability to discriminate**	**Fertilizers classification**	**a lecture with an explanation, a presentation,**	**Discussion**
13	**1**	**To be able to understand and assimilate scientific information and the ability to**	**Fertilizers classification**	**a lecture with an explanation, a presentation,**	**Discussion, quiz**
14	**1**	**To be able to understand and assimilate scientific information and the ability to**	**Revision**	**a lecture with an explanation, a presentation,**	**Discussion**
15	**1**	**----------**	**Second month exam**	**----------**	**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**

Theoretical Course Description

1. Course Name:
Genetics / Theoretical
2. Course Code:
GENE335
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Muhamed Auda Kalaf Email: mohammad.kalaf@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• 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	2 hours	Students will be able to understand genetics and its relationship to	Introduction to Genetics - Definition of Genetics - Its	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Second	2 hours	Mendelian inheritance - Mendel's first law - Mendel's second law - types of	Students will be able to identify Mendelian inheritance, Mendel's first law.	• Theoretical lecture • Presentation • discussion	Discussion and oral questions
Third	2 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	2 hours	Students will be able to understand the concept of multiple alleles and examples of multiple alleles, what sex chromosomes are, sex systems in	Students will be able to understand the concept of multiple alleles and examples of multiple alleles, what sex chromosomes are, sex systems in	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Fifth	2 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 explain the	Linkage and crossing over - Types of linkage - Mechanism of crossing over - Theories that explain the phenomenon of genetic crossing over - The most	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Sixth	2 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 genetic maps.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Seventh	2 hours	None	First Monthly Exam	None	None
Eighth	2 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	2 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, the structure of RNA, and the most important differences between them	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions
Tenth	2 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 and evidence that RNA is the genetic material in some	• Theoretical lecture • Presentation • Group discussion	Comparative report between closed culture systems, aquaponics and biofloc
Eleventh	2 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	2 hours	Protein synthesis - transcription and translation	Students will be able to identify how proteins are synthesized, replicated, and translated.	• Theoretical lecture • Presentation • Group discussion	Discussion and oral questions

Thirteenth	2 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	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- 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 / 2024-2025	
4. Description Preparation Date:	
02/01/2025	
5. Available Attendance Forms:	
Lab Attendance and Field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. 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 outcomes	Unit or Subject Name	Learning Method	Evaluation Method
First	3 hours	Students will be able to understand	Introduction in genetics	• Presentation • Discussion	Discussion and oral
Second	3 hours	Students will be able to understand mandell's first law	Mandell's first law	• Presentation • Discussion	Discussion and oral questions
Third	3 hours	Students will be able to understand mandell's second	Mandell's second law	• Presentation • Group discussion	Discussion and oral questions
Fourth	3 hours	Students will be able to understand types of dominance	Types of Dominance	• Presentation • Group discussion	Discussion and oral questions
Fifth	3 hours	Students will be able to understand branching	Branching Method	• Presentation • Group discussion	Discussion and oral questions
Sixth	3 hours	Students will be able to understand chi – squares test	Chi – Squares test	• Presentation • Group discussion	Discussion and oral questions
Seventh	3 hours	None	exam	None	None
Eighth	3 hours	Students will be able to understand genetics interaction	Genetic Interaction	• Presentation • Group discussion	Discussion and oral questions
Ninth	3 hours	Students will be able to understand multiple	Multiple alleles	• Presentation • Group discussion	Discussion and oral questions
Tenth	3 hours	Students will be able to understand sex designation	Sex designation & sex linkage	• Presentation • Group discussion	Comparative report between closed
Eleventh	3 hours	Students will be able to understand linkage	Linkage and crossing over	• Presentation • Group discussion	Discussion and oral questions
Twelfth	3 hours	Students will be able to understand genetics mapping	Genetic mapping	• Presentation • Group discussion	Discussion and oral questions
Thirteenth	3 hours	Students will be able to understand quantitative genetics	Quantitative genetics	• Presentation • Group discussion	Discussion and oral questions
Fourteenth	3 hours	Students will be able to understand dead genes	Dead genes		

Fifteenth	3 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 / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)

Name: Dr. 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
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 planting.	Harrawing-Benefits of Harrawing - Depth of Harrawing - Thinning machines - Leveling - Benefits of leveling - Conditions -	• Theoretical lecture • Presentation • Group discussion • Video presentations	Discussion and oral questions
Fourth	2 hours	Students will be able to recognize the importance of planting dates and calculating the	-Planting dates - Cumulative heat units (GDD) and their relationship to planting dates - Heat	• 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 calculations	• 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 - how to prevent and control them before they appear.	• 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 / 2024-2025
4. Description Preparation Date:
02/01/2025
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: 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	3 hours	**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 kayfiat ajara' eamaliaat khidmat almahsul eamaliana la yujad yakun altulaab qadirin ealaa altaearuf eamaliaat alrayi**	**General Introduction - Crop Concept - Crop Management Concept**	• Practical lecture • Presentation • Group discussion	Discussion and oral questions

Second	3 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 the Types of Plows**	• Practical lecture • Presentation • Group discussion	Quick test Students identify the appropriate type for a group of production units mentioned in the questions
Third	3 hours	**Students will be able to 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	3 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	3 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 mathematical	Solving practical problems

Sixth	3 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 management in the event of a field visit	Discussion between students and between them and the subject teacher or farm
Seventh	3 hours	None	First monthly exam	None	None
Eighth	3 hours	**Students will be able to identify irrigation operations**	**Irrigation - Methods for Determining Plant Irrigation Needs - Methods and Types of Irrigation**	• Practical lecture • Presentation • Video	Discussion and oral questions
Ninth	3 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	3 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 feasible for
Eleventh	3 hours	**Identify methods for controlling weeds, diseases,**	**Each student will prepare a report on the previous practical lectures**	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	3 hours	**None.**	. Weed Control - The Most Important Pesticides Used and Recommended for Control - Insect and Disease	• Practical lecture • Presentation • Video	Assigning students to transport a group of live fish by different means

Thirteenth	3 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	3 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 ripening signs of some crops.**	None	None
Fifteenth	3 hours	**None.**	**A scientific trip to seed and grain stores to learn about storage types, storage conditions, and methods for drying field produce. 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)	**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 / 2024- 2025	
4. Description Preparation Date:	
31/9/2025	
5. Available Attendance Forms:	
Attendance in Crop Hall No. 2	
6. Number of Credit Hours (Total)	
Number of Units (Total): 5 / 3.5	
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:	
Cultivation of marshlands - Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah	
2. Course Code:	
MACU416	
3. Semester / Year:	
2024-2025	
4. Description Preparation Date:	
15/ 9/2025	
5. Available Attendance Forms:	
Attendance in the laboratory	
6. Number of Credit Hours (Total) / Number of Units (Total):	
1.5	
7. Course Administrator's Name	
Name: Rawafid Hadi Al-obaidi	Email:rawafid.qasim: **@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 outcomes	Learning Method	Evaluation Method
1	3	Marshes of southern Iraq	The student should be able to identify the marshes.	• Practical lecture • Presentation Group discussion	Discussion and oral questions
2	3	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	3	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	3	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	**3**	**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	**3**	**----------**	**----------**	**• Practical lecture • Presentation Video**	**Discussion and oral questions**
7		**None**	**First-month exam**	**None**	**none**
8	**3**	**Plant environment - and aquatic plants spread in the area**	**The student should be able to identify the nature of water in**	**• Practical lecture • Presentation Video**	**Discussion and oral questions**
9	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**	**Environmental pollution, introduction, definition, and the**	**The student should be familiar with the causes of marsh pollution**	**• Practical lecture • Presentation Video**	**Discussion and oral questions**
14	**3**	**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	**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
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	
2024-2025	
4. Description Preparation Date:	
2 /01/ 2025	
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	
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	Evaluation
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**	**Evaluation 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 deference'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 deferent 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 throw 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-مبادى الوراثة الجزيئية، 2013. تاليف دكتور محمد باقر صاحب و د.علي حمود السعيد و حيدر كامل يدان** **2-اساسيات التقنية الحيوية، 2014. تاليف الدكتور علي ابراهيم عبيدة و الدكتور احمد عبد الفتاح محمود**

Main References (Sources)	1-مبادى الوراثة الجزيئية، 2013. تاليف دكتور محمد باقر صاحب و د.علي حمود السعيد و حيدر كامل يدان 2-اساسيات التقنية الحيوية، 2014. تاليف الدكتور علي ابراهيم عبيدة 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: 2025
First semester-fourth stage 2024-2025
4. Description Preparation Date:
12-2-2025
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 / 2025					
5. Available attendance forms					
In-person					
6. Number of credit hours (total) / number of units (total)					
5 Hours (2 Theoretical + 3 Practical), 3 Units					
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**	**2**	**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.**	**2**	**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 means by which they spread**	**2**	**3**
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.**	**2**	**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**	**2**	**5**

Daily exam	**Lecture with explanation in presentation**	**Methods to reduce the spread of toxic plants via *Prevention* and *Eradication***	**Students must be able to identify the most important methods that reduce the spread of weeds**	**2**	**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**	**2**	**7**
Exam	**none**	**none**	**None**	**2**	**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.**	**2**	**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**	**2**	**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**	**2**	**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**	**2**	**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.**	**2**	**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**	**2**	**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

Weeds and Their Control Methods / Practical Section **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.)**
	Electronic References and Websites

Practical Course Description

1. Course Name:	
practical Weed Biology / Practical	
2. Course Code:	
WEBI413	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
02/04/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 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	**3 hours**	**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	**3 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	**3 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	**3 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	**3 hours**	**None**	**Exam 1**	**None**	**None**
Sixth	**3 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	**3 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	**3 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	**3 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	**3 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	**3 hours**	**To be able to understand and assimilate scientific information and the ability**	**Types of sprays**	**• Lecture with explanation and presentation**	**Oral Discussion and Questions**
Twelfth	**3 hours**	**None**	**Exam 2**	**• None**	**None**
Thirteenth	**3 hours**	**None**	**General review**	**Group discussion Answering students' inquiries**	**None**

11. Course Evaluation

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

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**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 / 2024-2025
4. Description Preparation Date:
02/09/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. 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 aspects of these plants.**	**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 medicinal plants.**	**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 plants, and their side effects**	**Glacoside 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 hours	**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 and their structural formulas.**	**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 extraction.**	**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 used in extraction**	**Extraction by pressing, pricking, and enzymatic hydrolysis, high-performance liquid chromatography (HPLC)**	• Theoretical lecture • Presentation • Group discussion Video	Discussion and oral questions
Tenth	2 hours	**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 that contain them**	**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 that .contain them**	**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 importance to humans and plants.**	**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 / 2024-2025
4. Description Preparation Date:
2/2/2025
5. Available Attendance Forms:
My presence in the jungle laboratory – full time
. Number of Credit Hours (Total) / Number of Units (Total)6
(3 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 •

9. Teaching and Learning Strategies

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

10. Course Structure

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

1	**3**	**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	**3**	**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	**3**	**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	**3**	**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	**3**		**Exam1**		

6	**3**	**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
7	**3**	**Knowledge and understanding, brainstorming and mental skills, professional**	**Field visit to the field**	**Display Screen**	Daily and weekly test

8	**3**	**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	**3**	**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	**3**	**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	**3**	**The student will learn**	**Extraction by pressing, pricking, and enzymatic hydrolysis, high-**	**The student**	Daily and weekly test
13	**3**	**Students will be able to identify the**	**Vitamins: Types, occurrence, and extraction methods**		Daily and weekly test
14	**3**	**Students will be able to identify**	**Phenols: Types, composition, and medical importance**		Daily and weekly test
15		**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 / 2024-2025	
4. Description Preparation Date:	
02/9/2025	
5. Available Attendance Forms:	
My presence in Hall 2- full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours per week (2 hours theoretical + 3 hours practical) / 3.5 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	2 hours	**To be able to understand and assimilate**	**Cell Plant**	• **Lecture with explanation in**	**Lecture with explanation in**
Second	2 hours	**To be able to understand and assimilate scientific information**	**water potenatial of the cell plant water Absorpation**	• **Lecture with explanation**	**Display + Blackboard**
Third	2 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 explanation in presentation**	**Display + Blackboard**
Fourth	2 hours	**To be able to understand and assimilate scientific information and the**	**Stomata structure Factors effecting stomatal movment**	• **Lecture with explanation in presentation**	**Display + Blackboard**
Fifth	2 hours	**To be able to understand and assimilate**	**Photosynthesis Photosynthetic pigments**	**Lecture with explanation in presentation**	**Display + Blackboard**
Sixth	2 hours	**To be able to understand and assimilate**	**Exam1**	**Lecture with explanation in presentation**	**Display + Blackboard**
Seventh	2 hours	**To be able to understand and assimilate**	**Reactoin of photosynthesis Light reaction Dark reaction**	**Lecture with explanation in presentation**	**Display + Blackboard**

Eighth	2 hours	**To be able to understand and assimilate**	**C4 pathway**	**Lecture with explanation in presentation**	**Display + Blackboard**
Ninth	2 hours	**To be able to understand and assimilate**	**Carssulacean Acid Metabolism (CAM)**	**Lecture with explanation in presentation**	**Display + Blackboard**
Tenth	2 hours	**To be able to understand and assimilate**	**plant Regulator**	**Lecture with explanation in presentation**	**Display + Blackboard**
Eleventh	2 hours	**To be able to understand and assimilate**	**Plant Growth and development**	**Lecture with explanation in presentation**	**Display + Blackboard**
Twelfth	2 hours	**To be able to understand and assimilate**	**Control of plant growth**	**Lecture with explanation in presentation**	**Display + Blackboard**
Thirteenth	2 hours	**To be able to understand and assimilate**	**Stress environment**	**Lecture with explanation in presentation**	**Display + Blackboard**
Fourteenth	2 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:
Pratical physiological plant
2. Course Code:
PLPH420
3. Semester / Year:
First semester (Field Crops Section) The fourth stage 2024/2025
4. Description Date:
2-9-2025
5. Available Attendance Forms:
Attending college within practical Classification laboratory- full time
6. Number of Credit Hours (Total) / Number of Units (Total)
3.5
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	3 hours	**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	3 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	3 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	3 hours	**Knowledge and understanding, brainstorming and mental skills, professional and**	**The solution**	**Lecture with explanation and presentati**	**Display Screen**
Fifth	3 hours		**Exam 1**	**Lecture with explanation and presentation**	**Display Screen**
Sixth	3 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	3 hours	**Knowledge and understanding, brainstorming and mental skills,**	**Plant growth regulators**	**Lecture with explanation and**	**Display Screen**
Eighth	3 hours	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Gibberellins**	**Lecture with explanation and presentation**	**Display Screen**

Ninth	3 hours	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Photosynthesis**	**Lecture with explanation and presentation**	**Display Screen**
Tenth	3 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	3 hours	**Knowledge and understanding, brainstorming and mental skills,**	**The importance of plant mineral elements**	**Lecture with explanation and**	**Display Screen**
Twelfth	3 hours	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and**	**Growth Analysis**	**Lecture with explanation and presentation**	**Display Screen**
Thirteenth	3 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 / 2025
5. Available attendance forms
In-person
6. Number of credit hours (total) / number of units (total)
5 Hours Total (3 Theoretical + 2 Practical) = 3 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 quizze	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.**	**2**	**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.**	**2**	**2**
Daily exam	**Lecture with explanation in presentation**	**weed propagation methods**	**Students will be able to understand weed reproduction**	**2**	**3**

			and distinguish between weeds and economic crops		
Daily exam	Lecture with explanation in presentation	Dividing weed plants	Students will be able to understand how these plants are classified	2	4
Daily exam	Lecture with explanation in presentation	Losses caused by the weeds	Students will have knowledge of the losses caused by weeds	2	5
Daily exam	Lecture with explanation in presentation	Characteristics of weeds plants	Students' knowledge of weed characteristics and comparison with those of other plants	2	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	2	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	2	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	2	9
Daily exam	Lecture with explanation	Biological control methods	Students' knowledge of the types of	2	10

	in presentation		**biological methods used for weed control in Iraq**		
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**	**2**	**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 properties**	**2**	**12**
Daily exam	**Lecture with explanation in presentation**	Weeds Herbicide selectivity	**Students will be able to distinguish the effectiveness of herbicides and their role**	**2**	**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**	**2**	**14**
Exam	**none**	None	**none**	**1**	**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 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	**Weeds of the Cyperaceae and**	**3**	**11**

		and identification	**Verbenaceae families**		
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 – Abu	Key references (sources)
	Recommended supporting books and references (scientific journals, reports...)
	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(2025-2024-)
4. Date of preparation of this description
September 31, 2025

5. Available Attendance Forms
In-person in Crops Hall No. 2
6. Number of Study Hours (Total) / Number of Units (Total)
5 hours per week (2 hours theory + 3 hours practical) - 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.**
.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.**

.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 / 2024-2025	
4. Description Preparation Date:	
02/04/2025	
5. Available Attendance Forms:	
Attendance in the laboratory and field visits	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / 1.5 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	• 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 basic materials and equipment used in
9. Teaching and Learning Strategies	
Strategy	• Practical lectures in the laboratory and field visits.. • Presentations and video materials. • Group discussions. • Problem-based learning, inquiry and brainstorming. • Report and project-based learning.
10. Course Structure	

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

First	3 hours	Students will be able to identify the basic aspects of 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 their botanical descriptions.	• Practical lecture • Presentation • Group discussion	Discussion and oral questions
Second	3 hours	**Students will be able to distinguish between quantitative and qualitative measures of vegetation in a pasture based on the density and chemical composition of pasture plants.**	**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	3 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	3 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 grazing animals in pastures).**	• Explanation by the course instructor • Explanation by the pasture management	Discussion between students, their instructor, or the pasture management.

Fifth	3 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	3 hours	**None**	**First month exam**	• **None**	**None**
Seventh	3 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	3 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 pasture condition and trend)**	• Practical lecture • Presentation • Video	Discussion and oral questions

Ninth	3 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	3 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	3 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 behavior in pasture)**	• Practical lecture • Presentation • Video	Discussion and oral questions
Twelfth	3 hours	**Students will be able to identify the basics of pasture degradation and the basic methods for improving pastures.**	**Pasture Reforestation (Identifying the causes of vegetation deterioration and addressing the most important proposals for**	• Practical lecture • Presentation • Video	Assigning students to transport a group of live fish by different means
Thirteenth	3 hours	**None**	**Second Month Exam**	• **None**	**None**
Fourteenth	3 hours	**Students will be able to identify the basics of pasture**	**Pasture Classification Methods (Explaining the**	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 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
2024-2025
4. Description Preparation Date:
02 /01/ 2025
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 5 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 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	5	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	5	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	**5**	**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	**5**	**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	**5**	**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	**5**	**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	**5**	**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	**5**	**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	**5**	**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	**5**	**The student should be able to understand and**	**Definition of salt-loving girls, 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	**5**	**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	**5**	**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	**5**	**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 / تاليف الدكتور رياض عبد الليف احمد** ❖ **فسلجة الحاصلات الزراعية ونموها تحت الظروف الجافة/ تاليف رياض عبد اللطيف احمد**
Main References (Sources)	❖ **الماء في حياة النبات / تاليف الدكتور رياض عبد الليف احمد** ❖ **فسلجة الحاصلات الزراعية ونموها تحت الظروف الجافة/ تاليف 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:
31-1-2025
5. Available Attendance Forms:
Attending full time
6. Number of Credit Hours (Total) / Number of Units (Total)
5 hours 3 practical ,1.5 units
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	3	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	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	How to determine salt concentrations	Lecture with explanation presentation	daily exam
5	3	Knowledge and understanding, brainstorming	Salt stress	Lecture with explanation presentation	daily exam

		and mental skills, professional and scientific skills, and general skills			
6	**3**	**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	**3**	**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	**3**		**Monthly exam**		
9	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Bulk density stress**	**Lecture with explanation presentation**	**daily exam**
10	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills,**	**Experience the Bulk density stress**	**Lecture with explanation presentation**	**daily exam**

		and general skills			
11	**3**	**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	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Plant density stress**	**Lecture with explanation presentation**	**daily exam**
13	**3**	**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	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Experience nutritional stress**	**Lecture with explanation presentation**	**daily exam**
15	**3**		**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.نورالدين 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-
Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah
2. Course Code:
PLBR414
3. Semester / Year:
2024-2025
4. Description Preparation Date:
31-1-2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):

3
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	**3**	**Defining the science of plant breeding and improving it. Objectives of breeding science Conduct a field visit to learn about plant pollination**	**The student should be able to understand the basics of plant breeding.**	**Lecture with explanation and presentation**	**Oral discussion and questions**
2	**3**	**The floral system and its relationship to pedagogy and calculating the**	**The student should be familiar with floral systems and their**	**Lecture with explanation and presentation**	**Oral discussion and questions**
3	**3**	**Learn about the floral system of self-pollinating crops**	**The student should be able to understand the impact and benefit**	**Lecture with explanation and presentation**	**Oral discussion and questions**

4	**3**	**Learn about the floral system of cross-pollinated crops**	**The student should be able to understand and distinguish**	**The student should be able to benefit from**	**Scientific visit**
5	**3**	**Implementing taxes on some self-pollinating crops**	**Identifying male sterility and conducting crosses on some self-**	**Lecture with explanation and presentation**	**Oral discussion and questions**
6	**3**	**Conducting taxes on some cross-pollinated crops**	**Practical application of chromosome duplication**	**Learn how to breed the Shelami wheat crop**	**Oral discussion and questions**
7		**None**	**First-month exam**	**None**	**none**
8	**3**	**Field identification of vegetatively pollinated crops**	**The student should be able to distinguish between**	**Scientific visit**	**Discussion between students and between**
9	**3**	**Practical examples of hybrid vigor and indoor breeding in self-pollinated and**	**The student should be able to solve problems related to hybrid**	**Lecture with explanation, presentation and problem**	**Oral discussion in the classroom**
10	**3**	**A field visit to learn about fodder and vegetatively reproductive plants**	**The student should be familiar with the plant species present in**	**Scientific visit**	**Discussion between students and between**
11	**3**	**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	**3**	**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	**3**	**None**	**Second month exam**	**none**	**None**
14	**3**	**Identify the reasons for different heritability values**	**The student should be able to understand the types of**	**Lecture with explanation and presentation**	**Oral discussion and questions**
15	**3**	**Genetic mutations, their types and benefits of using them in breeding**	**The student should be familiar with the types of genetic mutations**	**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: -
Pratical Desert Land Cultivation
2. Course Code:
DLCU419
3. Semester / Year:
Second Semester / 2024-2025
4. Description Preparation Date:
2025/1/2
5. Available Attendance Forms:
Attendance in the laboratory and field visits
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / 1.5 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:fatima ali jamel **Email:** fatima.chamel@uobasrah.edu.iq
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	3	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	3	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	**3**	To be able to understand and assimilate scientific information and the ability to discriminate	Factors affecting desertification - secondery, natural causes Temperature - wind - atmospheric pressure – rain	theoretical and practical power point lectures Discussions,	Daily and monthly tests
4		To be able to understand and assimilate scientific information and the ability	Natural causes - B - wind erosion - salinity of soil and water	theoretical and practical power point lectures Discussions,	Daily and monthly tests
5	**3**	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	**3**	None	First monthly exam	None	None
7	**3**	None	a visit to a saline area, collection and identification of its plants	None	None
8		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	**3**	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	**3**	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	**3**	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	**3**	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	**3**	None	First monthly exam	None	None
14	**3**	None	**A scientific visit to one of the areas in western Basra (Al-Zubair) to learn**	**theoretical and practical power point**	
15	**3**	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 stage2024-2025
4. Description Preparation Date:

2-1-2025					
5. Available Attendance Forms:					
In presence- full time					
. Number of Credit Hours (Total) / Number of Units (Total):					
5 / 3.5					
. 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	2	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	2	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	2	To be able to understand and assimilate scientific	Differences between Deserts and Desertification	a lecture with an explanation,	Question and discussion
4	2	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	2	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	2	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			First-month exam		
8	2	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	2	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	2		General Characteristics of Plants in Arid Regions - Plant Adaptation	a lecture with an explanation,	Question and discussion
11	2	To be able to understand and assimilate scientific	Examples of Drought-Adapted Species	a lecture with an explanation,	Question and discussion
12	2		Monthly Exam		
13	2	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	2	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		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

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:
02/01/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours per week / 2 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Muhamed Auda Kalaf Email: mohammad.kalaf@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• **To learn about plant breeding and related sciences** • **To learn about plant breeding methods and the objectives of plant breeding • To study the methods of plant reproduction, male sterility, and its relationship to plant breeding** • **To study genetic and environmental variations and their relationship to plant growth** • **To define plant breeding and its importance** • **To learn about plant breeding methods • To learn about the difficulties facing plant breeders when implementing breeding programs**

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

10. Course Structure

Week	Hours	Required learning	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 duplication - its**	**• Theoretical lecture • Presentation • Group**	**Discussion and oral questions**
Sixth	**2 hours**	**Students will be able to identify plant breeding methods, the**	**Plant breeding methods - duties of genetic material**	**• 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 of**	**• 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 types**	**• Theoretical lecture • Presentation • Group**	**Discussion and oral questions**
Eleventh	**2 hours**	**The synthetic Variety - its features**	**Students will be able to identify what a compound class is and what**	**• 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 they occur.**	**• 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- ***Fourth stage - Department of Field Crops / College of Agriculture - University of Basrah***
2. Course Code:
PLBR414
3. Semester / Year:
2024-2025
4. Description Preparation Date:
31-1-2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total):
3
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	**3**	**Defining the science of plant breeding and improving it. Objectives of breeding science Conduct a field visit to learn about plant pollination**	**The student should be able to understand the basics of plant breeding.**	**Lecture with explanation and presentation**	**Oral discussion and questions**
2	**3**	**The floral system and its relationship to pedagogy and calculating the 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	**3**	**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	**3**	**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 program.**	**Scientific visit**
5	**3**	**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	**3**	**Conducting taxes on some cross-pollinated crops**	**Practical application of chromosome duplication**	**Learn how to breed the Shelami wheat crop using chromosome duplication**	**Oral discussion and questions**
7		**None**	**First-month exam**	**None**	**none**
8	**3**	**Field identification of vegetatively pollinated crops**	**The student should be able to distinguish between vegetatively propagated crops and their cultivation methods.**	**Scientific visit**	**Discussion between students and between them and the subject teacher or**
9	**3**	**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	**3**	**A field visit to learn about fodder and vegetatively reproductive plants**	**The student should be familiar with the plant species present in the field and how to distinguish between them.**	**Scientific visit**	**Discussion between students and between them and the subject teacher or farm**

11	**3**	**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	**3**	**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	**3**	**None**	**Second month exam**	**none**	**None**
14	**3**	**Identify the reasons for different heritability values**	**The student should be able to understand the types of inheritance and the differences between them.**	**Lecture with explanation and presentation**	**Oral discussion and questions**
15	**3**	**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**