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

Academic Program and Course Description Guide

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

Academic Program Description Form

University Name: ....University of Wasit

Faculty/Institute: ...College..of Agriculture

Scientific Department: ...Field..Crop sciences Dep.

Academic or Professional Program Name: .....

Final Certificate Name: ...B.S.c...in Agricultural Sciences

Academic System: ..... Courses

Description Preparation Date: 22/2/2024

File Completion Date: 22/2/2024

Signature:

Head of Department Name:
Hussien Almtarfi

Date: 21/5/2024

Assist. Prof
Jawadayn Talib Abed
Dean Assistant for Scientific Affairs

Signature:

Scientific Associate Name:

Date: 21/5/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 21/5/2024

Signature:

Hibat Allah A. Hussein

Assist. Prof
Dr. Hakeem.S. Abed
Dean

Approval of the Dean

1. Program Vision
The Field Crops Department looking forward to achieve excellence, facilitates the advancement of science and technology, and maintain a practical and scientific knowledge to whom get involved to crop production.

2. Program Mission
Establishing in place a framework of conserving the environment and community by applying the most precise and professional practices in the field crop production and provide the workers who work in agricultural sciences with high tech knowledge and experiences that can meet the market demands of the labor.

3. Program Objectives
1- Enhancing and extending the practical research that provides novelty and results in high quality of the publications. **2- Implementing high technology and learning methods to enhance and educate the community that is involved in crop production.** **3- Meeting the market and community demand for workers who are well prepared and trained.**

4. Program Accreditation
Does the program have program accreditation? And from which agency looking for **support**

5. Other External Influences Ministry of Higher Education and Scientific Research
Is there a sponsor for the program? **Government support is 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	-	-	-	
Others				

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

7. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
First stage First Semester	OCHEM105	**Organic chemistry**	**3**	**2**
	PRARA104	**Plain survey**	**2.5**	**1**
	BOT103	**Botany**	**3**	**2**
	PRCR101	**Principles of crops**	**3**	**2**
	ENGD108	**Engineering Drawing**	**3**	**-**
	DEMO102	**Democracy &human rights**	**-**	**1**
	ENGL106	**English language1**	**-**	**2**
First stage Second Semester	BIOCH1010	**Biochemistry**	**3**	**2**
	MATH1012	**Mathematics**		**3**
	SOIS1011	**principles of soil science**	**3**	**2**
	LFST109	**animal production principles**	**3**	**2**
	ARABL1013	**Arabic**	**2**	**-**
Second stage First Semester	CUMP107	**Computer applications2**	**2**	**-**
	PIHO205	**Principles of horticulture**	**3**	**2**

	ENGL209	**English language 2**	**-**	**2**
	AGME206	**Agricultural machinery and**	**3**	**2**

	FOTEC204	**principles of food industries**	**3**	**2**
	BACR207	**Baath crimes**	**2**	**-**
	FEFE203	**Soil fertility and fertilizer**	**3**	**2**
	AEXT204	**Agricultural Extension**		**2**
	PTAXO201	**plant Taxonomy**	**3**	**2**
	APICU210	**computer applications2**	**2**	**-**
Second stage Second Semester	FAMA203	**farm management**	**3**	**2**
	OI&SU202	**Oil and sugar crops**	**3**	**2**
	PRSTAT205	**Principles of Statistics**	**3**	**2**
	PLEC202	**Plant Ecology**	**3**	**2**
	MICO206	**principles of microbiology**	**3**	**2**
	AR&DR201	**Irrigation and Drainage**	**3**	**2**
	ARBL207	**Arabic2**	**2**	**-**
	GENE302	**Genetic**	**3**	**2**
Third Stage First Semester	FCRDE306	**Design and analysis of experiments**	**3**	**2**
	CRMEC3010	**Field crops mechanization**	**3**	**2**
	CRIN303	**Economic crop insects**	**3**	**2**
	LANRE304	**land reclamation**	**3**	**2**

	FOCRO305	**fodder crops**	**3**	**2**
Third Stage Second	FIBC308	**fiber crops**	**3**	**2**
	GRAC301	**grain crops**	**3**	**2**

	CRDE3011	**Crop diseases**	**3**	**2**
	SETECH307	**Seed technology**	**3**	**2**
	LEGCR309	**Legume crops**	**3**	**2**
Forth Stage First semester	MEPL404	**Medicinal plants**	**3**	**2**
	PLPS406	**Plant physiology**	**3**	**2**
	WEBI405	**Weed biology**	**3**	**2**
	CRMA402	**Field crops management**	**3**	**2**
	LACU403	**Cultivation of lands**	**3**	**2**
	MOGE401	**molecular genetics**	**3**	**2**
	GRRE407	**Graduation research**	**-**	**3**
	PLBR409	**Plant breeding**	**3**	**2**
Forth Stage Second semester	WECO410	**Weed control**	**3**	**2**
	ABST408	**Environmental stress**	**3**	**2**
	PASM414	**Pasture management**	**3**	**2**
	SEMI413	**Seminars**	**-**	**1**
	GRRE407	**Graduation research**	**-**	**3**

8. Expected Learning Outcomes of Program
Knowledge

Learning Outcomes **A- Cognitive objectives** Enhancing the knowledge and the integral scientific background of crop production 2-Gain a the last modern technology in crop production and 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	Enabling students to know the methods of growing field crops, their planting dates, and how to manage agricultural fields
Skills	
1.- . Soil preparation and reclamation technologies for agricultural use 3. Weed control, crop services, and fertilization technology. pests in agriculture, harvesting, raising animals, and food processing 3- Technology for irrigation and drainage engineering	Students' knowledge of the jungles spread in agricultural fields, as well as how to add fertilizers to field crops and how to prepare the soil before planting.
Ethics	
1-Post questions and answering them in the classroom 2-Defining the problem and its solution 3-Encourage analytical thinking and recognizing problems 4- A case study in graduation research and how to solve it	Identifying the most important problems facing students and ways to solve them using correct thinking

9. Teaching and Learning Strategies
-Lectures - Seminars Group 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	**Crop Science**	Breeding			**2**	
Prof.	**Crop Science**	Weed Control			**1**	
Assist.Prof.	Agriculture Extension	Agriculture Extension			**1**	
Lectures	**Crop Sciences**	**Crop Breeding**			**1**	
Lectures	**Plant Biotech.**	Gene expression			**1**	
Lectures	**Plant Sciences**	**Crop Physiology**			**1**	
Lectures	**Medical Plant**	**Plant stress**			**1**	

Ass. Lecturer	Economy	**Agricultura Economy**			**1**	
Ass. Lecturer	**Food Tecnology**	**Food Tecnology**			**1**	
Ass. Lecturer	**Biology**	**Biology**			**1**	
Ass. Lecturer	Crop Sciences	Crop Production			**1**	

Professional Development
Monitoring New Faculty Members
Put emphasis on growing personally by actively and continuously participating across both 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 references books, help books, the Internet, and scientific research

14. Program Development Plan
Regular training in specialized abilities and their application in practical and scientific areas **Implement knowledge in all specialized fields**

Program Skills outline																
				Required Program Learning Outcomes												
Year/	**Course Code**	**Course Name**	**Basic or Optional**	**Knowledge**				**Skills**				**Ethics**				
1	OCHEM105	organic chemistry	**Basic**	**A1**	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	
1	PRARA104	Plain survey	**Basic**	√	√	√	√	√				√	√	√	√	
1	BOT103	general plant	**Basic**	√		√	√	√		√		√	√	√	√	
1	PRCR101	Principles of crops	**Basic**	√	√	√	√	√		√		√	√	√	√	
1	ENGD108	Engineering Drawing	**Basic**	√	√	√	√		√	√		√	√	√	√	
1	DEMO102	human rights	**Basic**	√		√	√	√		√		√	√	√	√	
1	ENGL106	Biochemistry	**Basic**	√		√	√		√	√		√	√	√	√	
1	BIOCH1010	principles of agricultura	**Basic**	√	√	√		√		√		√	√	√	√	
1	MATH1012	Mathematics	**Basic**	√		√	√	√		√		√	√	√	√	
1	SOIS1011	principles of soil	**Basic**	√	√		√	√		√		√	√	√	√	
1	LFST109	animal production	**Basic**	√	√		√	√		√		√	√	√	√	
	ARABL1013	Arabic1	**Basic**	√	√		√	√		√						
1		English language**1**	**Basic**	√	√	√	√	√		√		√	√	√	√	
1		Computer applicatio	**Basic**	√	√	√	√	√		√		√	√	√	√	
2		Principles of	**Basic**	√	√	√	√	√		√		√	√	√	√	
2		Agricultural	**Basic**	√	√	√	√	√		√		√	√	√	√	
2		principles of food	**Basic**	√	√	√	√	√		√		√	√	√	√	
2		Agricultural	**Basic**	√	√	√	√	√		√		√	√	√	√	
2		Soil fertility	**Basic**	√	√	√	√	√	√	√		√	√	√	√	
2		plant classificati	**Basic**	√	√	√	√	√	√	√		√	√	√	√	
2		computer applicatio	**Basic**	√	√	√	√	√	√	√		√	√	√	√	
2		farm manageme	**Basic**	√	√	√	√	√	√	√		√	√	√	√	

2		English language2	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Oil and sugar	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Principles of	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		crops environme	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		principles of	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Ray and puncture	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Arabic2	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		**Baath crimes**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Heredity	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Design and	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Field crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Crop insects	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		land reclamatio	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		fodder crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		fiber crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		grain crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		field crop diseases	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		seed technolog	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		medicinal plants	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		plant physiolog	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		Weed biology	**Basic**	√	√	√	√	√		√		√	√	√	√
4		field crops manageme	**Basic**	√	√	√	√	√		√		√	√	√	√
4		Cultivatio n of marsh	**Basic**	√	√	√	√	√		√		√	√	√	√
4		molecular genetics	**Basic**	√	√	√	√	√		√		√	√	√	√
4		Graduatio n research	**Basic**	√	√	√	√	√		√		√	√	√	√
4		plant breeding	**Basic**	√	√					√		√	√	√	√
4		desert cultivation	**Basic**	√	√					√		√	√	√	√

4		Weed control	**Basic**	√	√		√	√		√		√	√	√	√
4		environmental stress	**Basic**	√	√		√	√		√		√	√	√	√
4		pasture manageme	**Basic**	√			√	√		√		√	√	√	√
4		Seminars	**Basic**	√			√	√		√		√	√	√	√
4		Graduation research	**Basic**	√	√		√	√		√		√	√	√	√
2		farm manageme	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		English language2	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Oil and sugar	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Principles of	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		crops environme	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		principles of	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Ray and puncture	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		Arabic2	**Basic**	√	√	√	√	√	√	√		√	√	√	√
2		**Baath crimes**	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Heredity	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Design and	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Field crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		Crop insects	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		land reclamatio	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		fodder crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		fiber crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		grain crops	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		field crop diseases	**Basic**	√	√	√	√	√	√	√		√	√	√	√
3		seed technolog	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		medicinal plants	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		plant physiolog	**Basic**	√	√	√	√	√	√	√		√	√	√	√
4		Weed biology	**Basic**	√	√	√	√	√		√		√	√	√	√

4		field crops manageme	**Basic**	√	√	√	√	√		√		√	√	√	√
4		Cultivatio n of marsh	**Basic**	√	√	√	√	√		√		√	√	√	√
4		molecular genetics	**Basic**	√	√	√	√	√		√		√	√	√	√
4		Graduatio n research	**Basic**	√	√	√	√	√		√		√	√	√	√
4		plant breeding	**Basic**	√	√					√		√	√	√	√
4		desert cultivation	**Basic**	√	√					√		√	√	√	√
4		Weed control	**Basic**	√	√		√	√		√		√	√	√	√
4		environme ntal stress	**Basic**	√	√		√	√		√		√	√	√	√
4		pasture manageme	**Basic**	√			√	√		√		√	√	√	√
4		Seminars	**Basic**	√			√	√		√		√	√	√	√
4		Graduatio n research	**Basic**	√	√		√	√		√		√	√	√	√

Course Description Form

1. Course Name:
organic chemistry
2. Course Code:
OCHEM105
3. Semester / Year:
Semester :first –the first stage / 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Hours / 3.5 Unite 5
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Muhsin Falah Email mufalih@uowasit.edu.

8. Course Objectives	
The curriculum included a general study of the organic chemistry of some of its formulations, including aliphatic compounds, their preparation methods, their most important reactions and their naming, as well as aromatic compounds and their derivatives and their nomenclature, halogen organic compounds, oxygen organic compounds, nitrogen compounds, and stereochemistry	• Student review of his knowledge of chemistry • This information is needed throughout the study period**. ..** • **.....** • **.....**
9. Teaching and Learning Strategies	
Strategy	The modern teaching strategy includes achieving learning objectives in general and teaching chemical concepts in particular, and the difficulties that the student faces in understanding and acquiring the concepts of organic chemistry, and treating the difficulties by defining the concepts of organic chemistry and helping students acquire the correct chemical concepts.

10. Course Structure					
Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
1	**2**	An overview of organic			Students participate in the lecture through questions coz exam Monthly exams
2	**2**	chemistry and the classes of organic chemistry			
3	**2**	Alkanes			

4	**2**	Alkenes			
5	**2**	Alkynes			
6	**2**	Assignment 1			
7	**2**	aromatic hydrocarbons			
8	**2**	Alkyl and alcohol halides			
9	**2**	Phenols and ethers			
10	**2**	Aldehydes and ketones			
11	**2**	carboxylic acids			
12	**2**	Amines			

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)	Organic chemistry book
Main References (Sources)	Bound organic chemistry
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
Organic Chemistry.	
2. Course Code:	
3. Semester / Year:	
first Semester/2023-2024	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
Laboratories	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week distributed over 11 weeks / number of unit 6	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name;- Muhsin Falah mufalih@uowasit.edu.	
8. Course Objectives	
Course Objectives	• **Teaching the student about laboratory equipment and tools, physical properties of organic materials, methods of purification and extraction, identification and preparation of active groups, and their estimation.**
9. Teaching and Learning Strategies	
Strategy	**Generating creative ideas and emphasizing the importance of opinions and diverse perspectives, as well as fostering teamwork in the laboratory for students.**
10. Course Structure	

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3		Physical properties of organic substances		
2	3		Purification and recrystallization of organic materials		
3	3		Solubility of organic compounds		
4	3		Detection of alkenes		
5	1		The first exam		
6	3		Detection of alcohols and phenols		
7	3		Detection of aldehydes and ketones		
8	3		Detection of carboxylic acids		
9	3		Methane gas preparation		
10	3		Preparation of aspirin		
11			The second exam		

End of term exam	
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)	**Book of Organic Chemistry.**
Main References (Sources)	**Organic Chemistry.**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Biochemistry
2. Course Code:
3. Semester / Year:
Seconed semester the first stage/ 2023 – 2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
Full time (theoretical lecture/practical lecture)
6. Number of Credit Hours (Total)/Number of Units (Total)
5 hours per week for 14 weeks
7. Course Administrator's Name (Mention All, If More Than One Name)
mufalih@uowasit.edu., Dr. Muhsin Falah

8. Course Objectives	
Course Objectives	Graduating capable students on the Work in the field of biochemistry - Introducing the student to the biochemistry curriculum - Helping students understand the syllabuses and vocabulary of the study and curriculum on sugars, proteins, and the cell - Identify the most important factors affecting enzymes inside the cell

9. Teaching and Learning Strategies	
Strategy	Enabling students to think and analyze topics related to the intellectual framework of biochemistry Enabling students to think and analyze topics related to enzymes and vitamins within the body Enabling students to think and analyze how laboratory tests work -Enabling students to think and analyze to identify the best biochemistry projects

10. Course Structure		- Obtaining the skills required for a post-graduation plan(Studiesupper). - Applying for external examinations by local / regional / international
		- Providing students with work skills in the Fields Scientific, research and study poultry And its relationship to with animal.

Week	**Hours**	Required learning outcomes	Unit or Subject Name	**Learning Method**	**Evaluation**
1	5	Introduction to the science of biochemistry - the components of the living cell and their functions	Introducing students to general information about science of biochemistry	Teaching method	the exams Daily and monthly
2	5	Carbohydrates: their definition, types, and explanations, along with the structures of sugars	Introducing students to the Carbohydrates	Lectures Theoretical and practical + Display	the exams Daily and
3	5	- stereosynthesis -Monosaccharides - Similarities in monosaccharides -	Introducing students to the- stereosynthesis -Monosaccharides	Lectures Theoretical and practical + Display	the exams Daily and
4	5	monosaccharides - Derivatives of Visual effectiveness	Introducing students to monosaccharides - Derivatives of the Visual effectiveness	Lectures Theoretical and practical + Display	the exams Daily and
5	5	Polysaccharides - homogeneous and heterogeneous types	. Introducing students to muscle fibers	Lectures Theoretical and practical + Display	the exams Daily and
6	5	Cyclopolysaccharides	Introducing students to general information about Cyclopolysaccharides	Lectures Theoretical and practical + Display	the exams Daily and
7	5	Fats - their definition - their importance - fatty acids - their sections - their structures - their	Management and care of Bones and cartilage .	Lectures Theoretical and practical + Display	the exams Daily and
8	5	Sections of fats, simple fats, their types (oils, fats and waxes), their compositions, fat	Management and care of Chemical composition of meat	Lectures Theoretical and practical + Display	the exams Daily and
9	5	Complex and derived fats - their types and compositions Amino acids - their types	Forced mowing.	Lectures Theoretical and practical + Display	the exams Daily and
10	5	structures, properties of amino acids and their interactions	Management and Throwing stiffness.	Lectures Theoretical and practical + Display	the exams Daily and
11	5	Peptides - proteins, their definition - their subdivisions - levels of protein synthesis –	Feed mill management.	Lectures Theoretical and practical + Display	the exams Daily and

12	5	Nucleic acids and their functions are types of amino acids	Quality characteristics management.	Lectures Theoretical and practical + Display	the exams Daily and
13	5	Vitamins	Cooking meat management	Lectures Theoretical and practical + Display	the exams Daily and
14	5	Enzymes - their definition, classification, and factors affecting the speed of the enzymatic	Meat preservation	Lectures Theoretical and practical + Display	the exams Daily and

11. Course Evaluation

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

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	Hassan, Ali Muhammad and Shihab, Saad Khalil. (1979) Agricultural Biochemistry, Part One, Baghdad University Press and the Ministry of Higher Education and Scientific Research. University of Baghdad
Main References (Sources)	Stryer,L.(1995).Biochemistry .4th edition .freeman (USA)
Recommended Books and References (Scientific Journals, Reports...)	**https://nu.edu.om/medicine/biochemistry/?lang=ar**
Electronic References, Websites	https://www.neelwafurat.com/itempage.aspx?id=egb70759-5070740&search=books https://www.rwaq.org/courses/introduction-to-

Course Description Form

1. Course Name:–

Practical biochemistry first stage - Department of Field Crops / College of Agriculture - University of Wasit
2. Course Code:
3. Semester / Year:2023- 2024
Seconed semester- first stage
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 5 / 3.5
7. Course Administrator's Name
8. Course Objectives

Course Objectives	**1- Different biochemisty** **2- Dfine elements biochemistry**
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		Carbohyderat	a lecture with lssues solving	display screen + a blackboard
2	3		Parts of carbohydrat	a lecture with lssues solving	display screen + a blackboard
3	3		Bendicat test	a lecture with lssues solving	display screen + a blackboard
4	3		Molish test	a lecture with lssues solving	display screen + a blackboard
5	3		Coloers carbohydert	a lecture with lssues solving	display screen + a blackboard
6	3		Lipds	a lecture with lssues solving	display screen + a blackboard
7			Exam		
8	3		Divided of lipds	a lecture with lssues solving	display screen + a blackboard
9	3		Test color lips	a lecture with lssues solving	display screen + a blackboard
10	3		Exaem	a lecture with lssues solving	display screen + a blackboard
11	3		Proteins	a lecture with lssues solving	display screen + a blackboard

12	**3**		**Sediment of proteins**	**a lecture with lssues solving**	**display screen + a blackboard**
13	**3**		**Test protein**	**a lecture with lssues solving**	**display screen + a blackboard**
14	**3**		**Peorat test**	**a lecture with lssues solving**	**display screen + a blackboard**
15			**Second month exam**		**display screen + a blackboard**

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	
Biochmestry manual	Foundations of breeding and genetics of field crops , Dr.Hamid Globe
Biochemistrymanual	Al-wajeez in genetics,written by Dr.Amin Abdul Jabbar
Sintfic research	Scientific journals
Sintfic jurnal	Some research and articles on genetics

Course Description Form

1. Course Name:
Principles of field crops
2. Course Code:
PRCR101
3. Semester / Year:2023- 2024
First semester-the first stage
4. Description Preparation Date:
22-2-2024

5. Available Attendance Forms: **I attend full time**	
Attending college within practical Classification laboratory	
6. Number of Credit Hours (Total) / Number of Units (Total): 3 / 3.5 – 5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
8. Course Objectives	
Course Objectives	• **Defining the science of field crops, its economic importance, field crops, divisions of agricultural fields, and describing these plants according to families.** • **The important commercial operations in**
9. Teaching and Learning Strategies	
Strategy	**The lesson includes (2) hours of theory and (3) hours of practical - the number of weekly hours is approved, distributed over 15 weeks.**
10. Course Structure	

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
1	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**The concept of field crops science - divisions of field crops - scientific nomenclature**	**Lecture with explanation and presentation.**	**Display Screen + field.**
2	**2**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills**	**The effect of environmental conditions and temperatures on plant growth and yield**	**Lecture with explanation and presentation**	**Display Screen + field.**
3	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**The effect of light on plants and photoperiod**	**Lecture with explanation and presentation**	**Display Screen + field.**

4	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**The effect of drought on plant growth and the damage caused by excess water.**	**Lecture with explanation and presentation**	**Display Screen + field.**
5	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Soil, texture, types of water in the soil, how to infer the presence of salinity in the soil**	**Lecture with explanation and presentation**	**Display Screen + field.**
6	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Germination of field crop seeds - factors affecting germination -**	**Lecture with explanation and presentation**	**Display Screen + Seed sample**
7	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Seed dormancy, what causes it, and how to get rid of it**	**Lecture with explanation and presentation**	**Display Screen + laboratory**
8	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Definition of jungles, methods of combating them, and the losses they cause**	**Lecture with explanation and presentation**	**Display Screen + field.**
9	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**The agricultural cycle, its importance and benefits for plants, and how to**	**Lecture with explanation and presentation**	**Display Screen + field.**
10	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**A field visit to nearby crop fields to learn about plants**	**Lecture with explanation and presentation**	**field.**
11	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Fertilizers and fertilization - Types of fertilizers -**	**Lecture with explanation and presentation**	**Display Screen + field.**
12	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Methods of adding fertilizers**	**Lecture with explanation and presentation**	**Display Screen + Fertilizer sample**
13	**2**	**Knowledge and understanding, brainstorming and mental skills,**	**Life factors and studying the relationship between field crops and other**	**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)	**لايوجد**

Main References (Sources)	**محمد امين اوميد نوري (1986). مبادئ المحاصيل الحقلية. وزارة التعليم العالي والبحث العلمي. جامعة البصرة. كلية .الزراعة** **الانصاري، مجيد محسن وآخرون (1980). مبادئ المحاصيل .الحقلية. وزارة التعليم العالي والبحث العلمي**
Recommended Books and References (Scientific Journals, Reports...)	**الانصاري، مجيد محسن (1982). انتاج المحاصيل الحقلية. .وزارة التعليم العالي والبحث العلمي. كلية الزراعة، جامعة بغداد**
Electronic References, Websites	**لايوجد**

Course Description Form

1. Course Name:
Principles of field crops
2. Course Code:
3. Semester / Year:2023- 2024
First semester-the first stage
4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
Attending college within practical Classification laboratory- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 3 / 3.5
7. Course Administrator’s Name (Mention All, If More Than One Name)
Dr. Nabel Lahmod : **الايميل :** nraheem@uowasit.edu.iq
8. Course Objectives

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

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

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	The concept of field crops science - divisions of field crops - scientific nomenclature	Lecture with explanation and presentation.	Display Screen + field.
2	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills and	Soil service operations - 1 - plowing - benefits of plowing - machines used in the plowing process	Lecture with explanation and presentation	Display Screen + field.
3	3	Knowledge and understanding, brainstorming and mental skills,	Soil Service Operations 2- Smoothing 3- Leveling 4- Laser	Lecture with explanation and presentation	Display Screen + field.
4	3	Knowledge and understanding, brainstorming and mental skills,	operations - methods of cultivation - A - method of cultivation according to the	Lecture with explanation and presentation	Display Screen + field.

5	3		Exam 1		
6	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Crop service operations - hoeing 3- grafting - grafting - planting depth - planting distances Germination of field	Lecture with explanation and presentation	Display Screen + Seed sample
7	3	Knowledge and understanding, brainstorming and mental skills, professional and	Conducting a laboratory experiment - Requirements and how to conduct germination tests -	Lecture with explanation and presentation	Display Screen + laboratory
8	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Botanical description of cereal and leguminous crops - display models	Lecture with explanation and presentation	Display Screen + field.
9	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Botanical description of oil crops and sugar crops - display models	Lecture with explanation and presentation	Display Screen + field.
10	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	A field visit to nearby crop fields to learn about plants	Lecture with explanation and presentation	field.
11	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	(Irrigation and drainage) - Irrigation methods - General benefits for the construction of drains	Lecture with explanation and presentation	Display Screen + field.

12	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Fertilizers and fertilization - types of fertilizers - ways to add fertilizers	Lecture with explanation and presentation	Display Screen + Fertilizer sample
13	3	Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills	Harvest - Early and Late Harvest Damage	Lecture with explanation and presentation	Display Screen + field.
14			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.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	محمد امين اوميد نوري (1986). مبادئ المحاصيل الحقلية. وزارة التعليم العالي والبحث العلمي. جامعة البصرة. كلية .الزراعة الانصاري، مجيد محسن وآخرون (1980). مبادئ المحاصيل .الحقلية. وزارة التعليم العالي والبحث العلمي
Recommended Books and References (Scientific Journals, Reports...)	الانصاري، مجيد محسن (1982). انتاج المحاصيل الحقلية. .وزارة التعليم العالي والبحث العلمي. كلية الزراعة، جامعة بغداد
Electronic References, Websites	لايوجد

Course Description Form

1. Course Name:	
Computer applications1	
2. Course Code:	
3. Semester / Year:	
First course - the first stage2023-2024	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
Full time (lecture practical)	
6. Number of Credit Hours (Total)/Number of Units (Total)	
3 hours per week for 14 weeks	
7. Course Administrator's Name (Mention All, If More Than One Name)	
huda.lafta@mail.ru**. Dr. Huda Lafta**	
8. Course Objectives	
Course Objectives	**General objective: Explain how the student uses the computer program and how to deal with its applications.** **.**
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**		**Definition of computer Introduction to the study of computers and types of computers**	**Direct applications on computers**	**Daily, monthly and final tests**
2	**3**		**Main components of a computer The most important Special Keys on the keyboard**	**Direct applications on computers**	**Daily, monthly and final tests**
3	**3**		**WINDOWS SYSTEM**	**Direct applications on computers**	**Daily, monthly and final tests**
4	**3**		**Folders How to create a folder**	**Direct applications on computers**	**Daily, monthly and final tests**
5	**3**		**First month exam**	**Direct applications on computers**	**Daily, monthly and final tests**
6	**3**		**Properties**	**Direct applications on computers**	**Daily, monthly and final tests**
7	**3**		**Start and its components**	**Direct applications on computers**	**Daily, monthly and final tests**

8	**3**		**Paint program Paint Windows drawing window**	**Direct applications on computers**	**Daily, monthly and final tests**
9	**3**		**Notepad program**	**Direct applications on computers**	**Daily, monthly and final tests**
10	**3**		**WordPad program**	**Direct applications on computers**	**Daily, monthly and final tests**
11	**3**		**Who is smarter, computer or human?**	**Direct applications on computers**	**Daily, monthly and final tests**
12	**3**		**An overview of the Internet**	**Direct applications on computers**	**Daily, monthly and final tests**
13	**3**		**How can we know the file type from its extension?**	**Direct applications on computers**	**Daily, monthly and final tests**
14	**3**		**Copy the file without burning it**	**Direct applications on computers**	**Daily, monthly and final tests**
15			**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)	**There are no methodological books**
Main References (Sources)	**Computer Curricula, Electronic Calculator Center, University of Kufa.**
Recommended Books and References (Scientific Journals, Reports...)	**No**

Electronic References, Websites	**Electronic Calculator Center, University of Basra**

Course Description Form

1. Course Name
: *English – first stage Department of Field Crops / College of Agriculture - University of Wasit*
2. Course Code:
3. Semester / Year:2023- 2024
First semester-the first stage
4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
In presence- **I attend full time**

6. Number of Credit Hours (Total) / Number of Units (Total): 5 / 3.5	
7. Course Administrator's Name	
Name: Wanas Shaial Yaber Email	
8. Course Objectives	
Course Objectives	**Providing the fundamental principles related to the agricultural specialization, which are considered an entry point to help the student understand the upcoming subjects and some of the terms used.**
9. Teaching and Learning Strategies	
Strategy	**The lesson includes (2) hours of theory , and distributed over 15 weeks.**
10. Course Structure	

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	Introduction		a lecture with an explanation, a presentation,	display screen + a blackboard
2	2	Agriculture definition		a lecture with an explanation, a	display screen + a blackboard
3	2	Agriculture definition and description		a lecture with an explanation, a	display screen + a blackboard

4	**2**	**Plant definition**		**a lecture with an explanation, a**	**display screen + a blackboard**
5	**2**	**Plant parts and function**		**a lecture with an explanation, a**	**display screen + a blackboard**
6	**2**	**Plant part and function**		**a lecture with an explanation, a**	**display screen + a blackboard**
7			**First-month exam**		
8	**2**	**Soil fertility**		**a lecture with an explanation, a**	**display screen + a blackboard**
9	**2**	**Soil fertility**		**a lecture with an explanation, a**	**display screen + a blackboard**
10	**2**	**Soil fertility**		**a lecture with an explanation, a**	**display screen + a blackboard**
11	**2**	**Germination**		**a lecture with an explanation, a**	**display screen + a blackboard**
12	**2**	**The factors affecting germination**		**a lecture with an explanation, a**	**display screen + a blackboard**
13	**2**	**The factors affecting germination**		**a lecture with an explanation, a**	**display screen + a blackboard**
14	**2**	**The factors affecting germination and photosynthesis**		**a lecture with an explanation, a**	**display screen + a blackboard**
15			**Second month exam**	**a lecture with an explanation, a**	**display screen + a blackboard**
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:
Principles of Soil Science
2. Course Code:
SOIS1011
3. Semester / Year:
Second semester \ first stage
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
I attend full time
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: Multiple Insectors	
8. Course Objectives	
Course Objectives	• **How soil is created and developed** • **Its most important physical, chemical and biological properties** • **The prevailing soils in Iraq**
9. Teaching and Learning Strategies	
Strategy	**In-person lectures for 15 weeks, including two monthly exams and daily exams**
10. Course Structure	

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
2-1	**2**		Soil development and formation	Lecture with explanation presentation	daily exam
4-3	**2**		Physical properties	Lecture with explanation presentation	daily exam
5	**2**		Soil water	Lecture with explanation presentation	daily exam
6	**2**		Monthly exam	Lecture with explanation presentation	daily exam
8-7	**2**		Colloids and soil chemical properties	Lecture with explanation presentation	daily exam

10-9	**2**		Salinity and alkalinity in soil and reclamation of soils affected by salts	Lecture with explanation presentation	daily exam
11	**2**		Biological and biochemical properties of soil	Lecture with explanation presentation	daily exam
12	**2**		Soil fertility and plant nutrition	Lecture with explanation presentation	daily exam
13	**2**		Monthly exam	Lecture with explanation presentation	daily exam
14	**2**		Organic soil matter	Lecture with explanation presentation	daily exam
15	**2**		Classification and management of soils in Iraq	Lecture with explanation presentation	daily exam

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)	**كتاب مبادي التربة 1989 – عبدالله العاني**
	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**

1. Course Name:	
Botany	
2. Course Code:	
BOT103	
3. Semester / Year: / 2023-2024	
First semester – first stage	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
Mandatory- I attend full time	
6. Number of Credit Hours (Total).Number of Units (Total)	
75 hours (30 theoretical + 45 practical. Number of Units (Total) 3.5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name:Dr. Hussien Almtarfi	Email: htarish@uowasit.edu.iq
8. Course Objectives	
Course Objectives	**Studying plants and identifying them by studying the general structure of the cell, studying the appearance and internal structure of the plant, and the relationship of botany to other sciences, and learning about the parts of the plant body, its types, and its composition, starting with the cells, tissues, and the main organs of the plant. Describing the shapes of seeds, their germination, and knowing the root, stem, leaves, and flowers in terms of origin, structure, and function. • Determine the effect of environmental factors and their relationship to the mutation of plant organs. • Show some of the physiological processes that occur in plants. Learn about the structure of an optical microscope and how to use it.**
9. Teaching and Learning Strategies	

Strategy	**-The ability to work in the agricultural sector specializing in field crops.** **-Encouraging students to excel academically to obtain new job opportunities.** **- Graduating students who have the ability to continue learning and developing inside and outside Iraq.** **-Preparing scientific researchers in the field of field crops.** **--Providing advice and up-to-date information to relevant institutions and ministries**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1		1-A historical overview of botany 2-The importance of plants to humans 3-Botany and its relationship to other sciences 4-The difference between plant and animal cells			
2		Chemical elements and compounds of plants, Inorganic components of the plant, Water - gases - salts - acids and bases. Organic components in plants: Carbohydrates			
3		Organic acids: (fatty acids - plant acids - amino acids - nucleic acids, proteins, enzymes, Nuclear proteins, lipids			
4		Plant cell, its discovery Cell contents, protoplast and its components, - protoplasm (protoplasmic components) non-protoplasmic components			

5		Cell wall Composition, composition, chemistry and nature of the wall			
6		**1st exam**			
7		Cell division, direct division Indirect mitosis, meiosis			
8		Plant tissues, meristematic tissues And their division, permanent or permanent tissue, Stomata (formation, structure, function)			
9		Fibers, phloem, vascular bundles and their types,			
10		Roots, root properties, root zones			
11		**2nd exam**			
12		Stem, properties and nature of growth, division of stems according to function, buds and their types, branching and its types, stem anatomy			
13		The leaf, the structure of the leaf, the types of leaves ,Arrangement of leaves on the stem, leaf development, leaf			
14		Flower and inflorescences, pollination and fertilization Types of inflorescences, fruits and seeds Fruit composition and types,			
15		**3rd 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)	No
Main References (Sources)	- Basics of general botany. 2011. Mahmoud Muhammad Jabr and Ismail Muhammad
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Plant Taxonomy
2. Course Code:
PTAXO201
3. Semester / Year:2023- 2024
First semester- first stage
4. Description Preparation Date:2023
22-2-2024
5. Available Attendance Forms:
Attending college within practical Classification laboratory- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 3 / 3.5
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Dr. Hussien Almtarfi Email: htarish@uowasit.edu.iq
8. Course Objectives

Course Objectives	**The study of general botany includes observations with the naked eye, microscope (microscope) in the study of the minute parts of fancy plants. It learns about the external parts of plants and the internal anatomy of the plant, as well as the proteins that occur in the sexual and somatic cells of aromatic and low-lying 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	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	The microscope, its parts, how to use it, how to examine slides with it, calculating the magnification power of the lenses.	**Lecture with explanation and presentation.**	**Laboratory + Show videos on correct use while working inside the laboratory.**
2	3	**Knowledge and understanding, brainstorming and mental skills, professional and**	**Explaining the types of segments and the difference between permanent and temporary**	**Samples of slides for s**	**laboratory experiment**
3	3	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Plant Cell Cell contents: A-Protoplast and its components: 1-Protoplasm (protoplasmic components) 2- Non-protoplasmic components B-Cell wall Composition,**	**Lecture with explanation and presentation Use a + microscope**	**Display screen +laboratory work .**
4	3	**Knowledge and understanding, brainstorming and mental skills, professional and**	**Cell division, direct division, indirect division, meiosis**	**Lecture with explanation and presentation**	**Display screen + examination of slides under a**

5	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Exam 1**		
6	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Connective tissue Stomata (formation, structure, function) Non-secretory appendages Plant tissue Meristematic tissues and their division Continuous or permanent tissue**	**Lecture with explanation and presentation**	**Display screen + examination of slides under a microscope**
7	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Vascular tissue Fiber Bark Vascular bundles and their types**	**Lecture with explanation and presentation**	**Display screen + examination of slides under a microscope**
8	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**the roots The root and its qualities Root zones Types of roots Root anatomy**	**Lecture with explanation and presentation**	**Display screen + examination of slides under a microscope**
9	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills,**	**the leg Characteristics and nature of growth Division of stems according to function**	**Lecture with explanation and presentation**	**Display screen + examination of slides under a microscope**
10	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**the paper Installation of the sheet Types of papers**	**Lecture with explanation and presentation**	**Display screen + examination of slides**

11	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Flower and inflorescences Reveals its surroundings Pollination and fertilization Types of inflorescences**	**Lecture with explanation and presentation**	**Display screen + Plant samples**
12	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Fruits and seeds Fruit composition and types**	**Lecture with explanation and presentation**	**Display + samples**
13	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Seed and its structure Types of seeds**	**Lecture with explanation and presentation**	**Display + samples**
14			**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.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**Practical general plant**
Main References (Sources)	**الموسوي، عبد الله حمد. السعدي، حسين علي (1980). وزارة التعليم العالي والبحث العلمي. كلية العلوم. جامعة البصرة.**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
Land leveling	
2. Course Code:	
PRARA104	
3. Semester / Year:	
First semester-first stage 2022-2023	
4. Description Preparation Date: 22-2-2024	
5. Available Attendance Forms: Available at the hall	
Attending college within practical Classification laboratory- 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: Ali Malick	
8. Course Objectives	
Course Objectives	**• Introducing the student to the science of surveying and its importance • surveying and agricultural • Survey methods and types (direct and indirect). • The most important devices used in measuring distances, areas, and angles • How to use the leveling device and theodolite**
9. Teaching and Learning Strategies	
Strategy	**We depend on methodological book and the lecture given to the students, with practical application using the surveying devices and tools available in the surveying laboratory.**
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 material and apply it in the practical lesson. The student pass daily and monthly exams**	Definition of survey, types of surveys, its importance in agriculture, requirements for a good survey	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly**	Measurement systems, units of measurement, accuracy in surveys, errors	**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**
3	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Drawing scales, types, features, how to doing 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**

4	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Methods for measuring distances, from nature and from maps, direct methods for horizontal and diagonal distances	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Errors in survey work, methods of addressing and overcoming them	**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	**2**	**The student should be able to understand and**	Surveying by tape, station selection conditions, field book note	**Professor's explanation of the theoretical subject using shapes and illustrations arranged**	**First exam**
7	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass**	Indirect methods of measuring distances, how to use surveying devices for this purpose	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Measuring distances using electronic devices	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Areas, how to calculate them for regular and irregular shapes, calculate areas using some devices	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Leveling, its terminology, its importance in agriculture, the use of the level.	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Types of leveling, curvature and refraction phenomena and their treatment	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	Methods for calculating point levels and elevation difference, direct and indirect	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly exams**	working the longitudinal sectors, how to calculate the slope and draw the longitudinal section	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly**	Calculation of excavation and backfill quantities	**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	**2**	**The student should be able to understand and comprehend the theoretical material and apply it in the practical lesson. The student pass daily and monthly**	General Review	**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**	

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)	**Plane survey / methodical book**
Main References (Sources)	**Plane survey / methodical book**
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	**https://www.routledge.com/Engineering-Surveying/Schofield-Breach/p/book/9780750669498#:~:text=Engineering%20surveying%20involves%20determining%20the,design%20and%20construction%20of%20w**

Course Description Form

1. Course Name:
The agricultural economy
2. Course Code:
AGRECO1014
3. Semester / Year:2023- 2024
First semester-first stage
4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
My presence in the department hall- I attend full time
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: Sarah Ali	
8. Course Objectives	
Course Objectives	**Introducing the principles and basics of agricultural production economics and economic principles related to production, marketing, etc.**
9. Teaching and Learning Strategies	
Strategy	**The lesson includes (2) theoretical hours, a number of weekly credit hours distributed over 15 weeks.**
10. Course Structure	

Week	**Hours**	**Required learning**	**Unit or Subject**	**Learning Method**	**Evaluation Method**
1	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Introduction to economics and consumer behavior theory**	**Lecture with explanation and presentation.**	**Display Screen**
2	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**The role of agricultural activity in the national economy**	**Lecture with explanation and presentation**	**Display Screen**
3	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Economics of agricultural production**	**Lecture with explanation and presentation**	**Display Screen**
4	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Production costs the first exam**	**Lecture with explanation and presentation**	**Display Screen**

5			**the first exam**		
6	**3**	**Knowledge and understanding, brainstorming and mental skills, professional**	**Agricultural prices**	**Lecture with explanation and presentation**	**Display Screen**
7	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Markets and their types**	**Lecture with explanation and presentation**	**Display Screen**
8	**3**	**Knowledge and understanding, brainstorming**	**Agricultural policy**	**Lecture with explanation and presentation**	**Display Screen**
9	**3**	**Knowledge and understanding, brainstorming**	**Farm management**	**Lecture with explanation and presentation**	**Display Screen**
10	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Agricultural development**	**Lecture with explanation and presentation**	**Display Screen**
11			**Second exam**		
12	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Agricultural marketing**	**Lecture with explanation and presentation**	**Display Screen**

13	**3**	**Knowledge and understanding, brainstorming and mental skills, professional and scientific skills, and general skills**	**Agricultural finance**	**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)	**No**
Main References (Sources)	**الاقتصاد الزراعي/ د.عبد الوهاب مطر الداهري/وزارة التعليم العالي والبحث العلمي/1980**
Recommended Books and References (Scientific Journals, Reports...)	**مباديء الاقتصاد الزراعي/د.احمد أبو اليزيد**
Electronic References, Websites	كتاب الاقتصاد الزراعي PDF - محمود سليم	فور ريد (4readlib.com)

Course Description Form

1. Course Name:
Democracy and Human Rights - First Stage - for all departments / College of Agriculture - University of Wasit
2. Course Code:
DEMO102
3. Semester / Year:
The first semester - The first stage 2023-2024
4. Description Preparation Date

22-2-2024
5. Available Attendance Forms:
Presence I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 2 Hours weekly 2 units
7. Course Administrator's Name
Ass. Lecture Amar Hedal
8. Course Objectives

Course Objectives	**1- Focusing on the fact that rights and freedoms are an integrated theory that has developed throughout the eras of history, and has gone through historical turning points and events that were embodied after a conflict between two trends. The first is based on the foundations that authority is an end and individualism is to serve the legal system in order to achieve its interests. This naturally focuses on restricting freedoms and rights.** **2- Focusing on the fact that the individual is a goal and that authority and the state achieve the individual's goal is a matter that occupied thought, leading to the laws embodying the idea of rights and freedoms in their current form and what religions and divine laws have added to it to form a basic source for this content.** **3- Trying to convey the idea that the importance of rights education comes from a comprehensive and continuous process targeting all peoples and nations and working to consolidate the fulfillment of rights and duties through education, training and media.**

9. Teaching and Learning Strategies

Strategy	**The lesson includes two theoretical hours, the number of hours per week distributed over 15 weeks.**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**		**Human rights and its concepts**	**An explanatory lecture with explanations and examples using a display screen with**	**Surprise tests and assigning students to manage the lecture under supervision and guidance from us, including tests at the end of each course and monthly.**
2	**2**		**Characteristics and types**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**

3			**The historical development of the idea of human rights according to**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
4			**The historical development of the idea of human rights among**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
5			**The historical development of the idea of human rights, in the**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
6			**Intellectual contribution to the development of the idea of human**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
7			**First-month exam**		
8			**Intellectual contribution to the development of the idea of human**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
9			**Types of rights**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
10			**Types and public freedoms**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
11			**The position of some international agreements on human rights**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
12			**The position of some international agreements on human rights**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
13			**Democracy and public freedoms**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**
14			**Human rights in declarations of rights and regional documents**	**An explanatory lecture with explanations**	**Surprise tests and assigning students to manage the lecture under supervision and**

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.

12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	The emergence of the theory of public rights and freedoms
Main references (sources)	Public freedoms and human rights, Dr. Muhammad Saeed A collection of international documents on human rights
Recommended supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on fiber

Course Description Form

1. Course Name:
Engineering Drawing
2. Course Code:
ANENGN108
3. Semester / Year:
First course – first stage 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
Full time (lecture practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week for 14 weeks
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Ali malik

8. Course Objectives	
Course Objectives	• **Working in the field of engineering drawing to create engineering plans and drawings** • **Obtaining the skills required for the post-graduation plan (postgraduate studies).** • **Applying for external tests by local/regional/international bodies.** • **Providing students with skills to work in scientific and research laboratories and study engineering drawing**

9. Teaching and Learning Strategies	
Strategy	**The lesson includes two theoretical hours, the number of hours per week distributed over 15 weeks**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**3**	Introducing students to general information about engineering drawing tools.	Introduction to engineering drawing tools	Practical lectures	the exams
2	**3**	Introducing students to the types of engineering drawing lines.	Introduction to the types of engineering drawing lines	+ Display methods	Daily and monthly
3	**3**	Explain how to plan and install the drawing board	How to plan and install a drawing board	+Dialogue and discussion	And final reports
4	**3**	Introducing students to some engineering processes	Engineering operations, part one, includes:	Practical lectures	Daily

5	**3**	Introducing students to some engineering processes	A- Bisecting a straight line.	+ Display methods	the exams
6	**3**	Introducing students to some engineering processes	B- Bisecting an angle.	+Dialogue and discussion	Daily and monthly
7	**3**	Introducing students to some engineering processes	C- Draw a pentagon inside a circle.	Practical lectures	And final reports
8	**3**	Introducing students to how to draw geometric projections	D- Draw a hexagon given the side length.	+ Display methods	Daily
9	**3**	Introducing students to how to draw geometric perspective	E- Draw a hexagon surrounding a circle	+Dialogue and discussion	the exams
10	**3**	Redrawing some important drawings	Engineering operations, part two, includes:	Practical lectures	Daily and monthly
11	**3**	Redrawing some important drawings	A- Draw an arc tangent to a straight line.	+ Display methods	And final reports
12	**3**	Redrawing some important drawings	B- Draw an arc tangent to the circumference of a circle and a known straight line	+Dialogue and discussion	Daily
13	**3**	Redrawing some important drawings	Engineering operations, part three, includes:	Practical lectures	the exams
14	**3**	Redrawing some important drawings	A- Draw a tangent to an interior circle.	+ Display methods	Daily and monthly
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)	الرسم الهندسي لطلبة كليات الزراعة. د. ناطق صبري حسن. 1999
Main References (Sources)	الخفاف، عبد الرسول، الرسم الهندسي، الجامعة التكنلوجية، مركز التعريب والنشر، بغداد، 1986
Recommended Books and References (Scientific Journals, Reports...)	**Engineering drawing for engineers and technicians**
Electronic References, Websites	**أسامة محمد المرضي سليمان، "مذكرة محاضرات في الرسم الهندسي 2" جامعة وادي النيل، كلية الهندسة**

Course Description Form

1. Course Name:
Principles of horticulture
2. Course Code:
PIHO205
3. Semester / Year:2023- 2024
First semester-second stage
4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
Attending college within practical crop hall- 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 : Dr. Ahmad Shaker Email: gl718@uowasit.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 outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
1	**2**		**History of Horticulture science**	**Lecture with explanation and presentation.**	**Display Screen**
2	**2**		**The nutritional value of horticultural crop ,mineral element ,protin ,vitamin**	**Lecture with explanation and presentation**	**Display Screen**
3	**2**		**Factors affecting the growth of productivity of horticulture a-**	**Lecture with explanation and presentation**	**Display Screen**
4	**2**		**Factors affecting the growth of productivity of horticulture a- atmospheric factors ,tem,humitiy ,wind**	**Lecture with explanation and presentation**	**Display Screen**
5			**Exam1**		

6	**2**		**Sexal reproduction ,the importance ,the the applications the affecting growth of productivity of horticulture b-terestrial factors ,soil water ,salt**	**Lecture with explanation and presentation**	**Display Screen**
7	**2**		**Factor Vegetative propagation ,budding ,cutting ,larying**	**Lecture with explanation and presentation**	**Display Screen**
8	**2**		**Tissue cultre technique**	**Lecture with explanation and presentation**	**Display Screen**
9	**2**		**Tissue cultre technique**	**Lecture with explanation and presentation**	**Display Screen**
10	**2**		**Cultivation in aconditioned environment ,construction of green hous and glass**	**Lecture with explanation and presentation**	**Display Screen**
11	**2**		**The nursery ,and condition required,**	**Lecture with explanation and presentation**	**Display Screen**
12	**2**		**Division of horticulture crop s ,vegetatable plans ,fruit plants ,**	**Lecture with explanation and presentation**	**Display Screen**
13	**2**		**Division of ornamental plant ,flower ,tree**	**Lecture with explanation and presentation**	**Display Screen .**
14			**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.

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...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Practical Principles of horticulture
2. Course Code:
PIHO205
3. Semester / Year:2023- 2024
First Semester – Seconed stage (Crop Section) (2023-2024)
4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
Attending college within practical crop hall- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 3 / 3.5
5 hours per week (2 theoretical hours + 3 practical hours) - 3 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name : Dr. Ahmad Shaker Email: gl718@uowasit.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 outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**		**Introduction to horticulture division and classification of plants**	**Lecture with explanation and presentation.**	**Display Screen**
2	**2**		**Identify some types of plants (vegetables, fruits, ornaments)**	**Lecture with explanation and presentation**	**Display Screen**
3	**2**		**Horticultural service operations (patching, thinning, hoeing, soil mulching, irrigation,**	**Lecture with explanation and presentation**	**Display Screen**
4	**2**		**Practicing cultivation operations in the fields of the College of Agriculture**	**Lecture with explanation and presentation**	**Display Screen**
5	**2**		**Exam1**	**Lecture with explanation and presentation**	**Display Screen**

6	**2**		**Cultivation of seeds for several types of plants (according to the planting season) in different ways in agricultural facilities in the Faculty of Agriculture Breeding methods: sexual reproduction (seed farming methods, agriculture in sindin, box farming, basin farming, maroz agriculture, agriculture in sustainable drilling, peat snadin agriculture and Jiffy7 tablets**	**Lecture with explanation and presentation**	**Display Screen**
7	**2**		**Vegetative propagation: Methods of vegetative**	**Lecture with explanation and presentation**	**Display Screen**
8	**2**		**Vaccination, types of vaccination, (shield vaccination, patch vaccination, ring**	**Lecture with explanation and presentation**	**Display Screen**
9	**2**		**A practical lesson on cuttings and grafting, in the fields of the Faculty of**	**Lecture with explanation and presentation**	**Display Screen**
10	**2**		**Propagation by laying (its advantages, disadvantages, laying**	**Lecture with explanation and presentation**	**Display Screen**
11	**2**		**The basics of establishing fruit orchards (private orchards,**	**Lecture with explanation and presentation**	**Display Screen**
12	**2**		**Fruit tree planting systems and counting the number of trees (methods of planting**	**Lecture with explanation and presentation**	**Display Screen**

13	**2**		**Calculating the number of trees in a quadrilateral way with timers (in one or**	**Lecture with explanation and presentation**	**Display Screen .**
14			**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.	
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...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Computer applications2
2. Course Code:
CUMP107
3. Semester / Year:
Second course –Seconed stage 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
Full time (lecture practical)

6. Number of Credit Hours (Total)/Number of Units (Total)	
3 hours per week for 14 weeks	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name:Dr. Huda Lafta huda.lafta@mail.ru	
8. Course Objectives	
Course Objectives	**General objective: Explain how the student uses the AutoCAD program and how to deal with its applications.** **Specific objective: Developing the student's ability to use AutoCAD in the field of engineering design and drawing.**
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
1	**3**	Acquire skill in the topic mentioned in the next cell of the table	Program operation and general concepts	Direct applications on computers	Daily, monthly and final tests
2	**3**	Acquire skill in the topic mentioned in the next cell of the table	Learn about the drawing commands listed under the "Master" tab.	Direct applications on computers	Daily, monthly and final tests
3	**3**	Acquire skill in the topic mentioned in the next cell of the table	Precise drawing and drawing aids such as "Mesh:," "Command Line," "Orthogonality," and "Jump to Elements".	Direct applications on computers	Daily, monthly and final tests

4	**3**	Acquire skill in the topic mentioned in the next cell of the table	Modifying drawing commands such as delete, move, mirror, matrix, rinse, and stretch commands.	Direct applications on computers	Daily, monthly and final tests
5	**3**	Acquire skill in the topic mentioned in the next cell of the table	.**Exam1**	Direct applications on computers	Daily, monthly and final tests
6	**3**	Acquire skill in the topic mentioned in the next cell of the table	Writing and scratching . Adding dimensions in terms of dimension components and signs	Direct applications on computers	Daily, monthly and final tests
7	**3**	Acquire skill in the topic mentioned in the next cell of the table	Blocks and descriptions, controlling their specifications, and how to configure,	Direct applications on computers	Daily, monthly and final tests
8	**3**	Acquire skill in the topic mentioned in the next cell of the table	3D drawing.	Direct applications on computers	Daily, monthly and final tests
9	**3**	Acquire skill in the topic mentioned in the next cell of the table	Rigid bodies, how they are created, and the addition and subtraction operations that are performed on them.	Direct applications on computers	Daily, monthly and final tests
10	**3**	Acquire skill in the topic mentioned in the next cell of the table	Advanced editing operations such as 3D rotation, rectangular matrix, circular matrix, 3D woman, section commands, face extrusion, corner rotation, surface copying, and surface coloring.	Direct applications on computers	Daily, monthly and final tests

11	**3**	Acquire skill in the topic mentioned in the next cell of the table	Shading and materials in terms of shading drawing elements and adjusting the background color of the scene.	Direct applications on computers	Daily, monthly and final tests
12	**3**	Acquire skill in the topic mentioned in the next cell of the table	External files: using external components and adding them to the drawing to reduce effort and not add time with routine work, such as adding people, some furniture, or cars to the drawing.	Direct applications on computers	Daily, monthly and final tests
13	**3**	Acquire skill in the topic mentioned in the next cell of the table	Printing and output After completing the work on the computer, there must be a way to present the output to the beneficiary party in one of the appropriate ways, such as protective printing, submitting it as a PDF file, or publishing it on the web.	Direct applications on computers	Daily, monthly and final tests
14	**3**	Acquire skill in the topic mentioned in the next cell of the table	Applications to 2D and 3D graphics.	Direct applications on computers	Daily, monthly and final tests

15			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.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**There are no methodological books**
Main References (Sources)	**Computer Curricula, Electronic Calculator Center, University of Kufa.**
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	**Electronic Calculator Center, University of Basra**

Course Description Form

1. Course Name:
(Agricultural extension) -
2. Course Code:
AEXT204
3. Semester / Year:
Second Semester –Second stage(2023-2024)
4. Description Preparation Date:
22-2-2024

5. Available Attendance Forms: Attending college within practical microbiology laboratories
My presence in Hall 2- I attend full time
6. Number of Credit Hours (Total) / Number of Units (Total): 2
2 hours per week -2units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Sara Ali
8. Course Objectives

Course Objectives	•
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 outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**		**Agricultural extension and its impact on the development of rural communities**	**Lecture with explanation in presentation**	**Display**
2	**2**		**The role of agricultural extension in development and combating underdevelopment**	**Lecture with explanation in presentation**	**Display**

3	**2**		**Agricultural extension –phylsophy and objective**	**Lecture with explanation in presentation**	**Display**
4	**2**		**General principles of agricultural extension**	**Lecture with explanation in presentation**	**Display**
5	**2**		**Exam1**		
6	**2**		**Agricultural extension activity and its development The different factors watch effect of Agricultural extension**	**Lecture with explanation in presentation**	**Display**
7	**2**		**Agricultural Extension Systems and Organizations**	**Lecture with explanation in presentation**	**Display**
8	**2**		**Types of Agricultural extension**	**Lecture with explanation in presentation**	**Display**

9	**2**		**Characteristics of an agricultural guide**	**Lecture with explanation in presentation**	**Display**
10	**2**		**agricultural advisor qualifications**	**Lecture with explanation in presentation**	**Display**
11	**2**		**Duties and duties of an agricultural guide**	**Lecture with explanation in presentation**	**Display**
12	**2**		**Program planning and evaluation**	**Lecture with explanation in presentation**	**Display**
13	**2**		**Principles of planning guidance programs**	**Lecture with explanation in presentation**	**Display**
14			**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.

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:	
Oil and sugar crops	
2. Course Code:	
OI&SU202	
3. Semester / Year:2023- 2024	
Second Semester- Second stage	
4. Description Preparation Date:2024	
22-2-2024	
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	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name:	
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.**

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.	Display Screen + field.
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	Extraction inside the laboratory using the device
3	3	Knowledge and understanding, brainstorming and mental skills,	Sunflower and its botanical description	Lecture with explanation and presentation	Display Screen + field.
4	3	Knowledge and understanding, brainstorming and mental skills,	Corn(Maize) crop and its botanical description	Lecture with explanation and presentation	Display Screen + field.
5	3		Exam1		
6	3	Knowledge and understanding, brainstorming and mental skills,	Soybean and its botanical description Peanut and its botanical description	Lecture with explanation and presentation	Display Screen + Seed sample
7	3	Knowledge and understanding, brainstorming and mental skills,	Safflower and its botanical description	Lecture with explanation and presentation	Display Screen + field.
8	3	Knowledge and understanding, brainstorming and mental skills,	Rapesed and its botanical description	Lecture with explanation and presentation	Display Screen + field.

9	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Cotton and its botanical description**	**Lecture with explanation and presentation**	**Display Screen + field.**
10	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Flax crop and its botanical description**	**Lecture with explanation and presentation**	**field.**
11	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**View live samples of some oil crops and identify their seeds**	**Field**	**field.**
12	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Sugar plants (sugarcane) and its botanical description**	**Lecture with explanation and presentation**	**Display Screen**

12	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Sugar plants (sugarcane) and its botanical description**	**Lecture with explanation and presentation**	**Display Screen**
13	**3**	**Knowledge and understanding, brainstorming and mental skills,**	**Sugar beet yield and its botanical description**	**Lecture with explanation and presentation**	**Display Screen**
14			**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.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**Oil and sugar crops**
Main References (Sources)	**رزق،توكل يونس وحكمت عبد علي (1980). المحاصيل الزيتية والسكرية .وزارة التعليم العالي والبحث العلمي.** **ور، حسين عوني ورزكار حمدي رشيد(1990). المحلصيل الزيتية. وزارة التعليم العالي والبحث العلمي.جامعة الموصل.**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**no**

Course Description Form

1. Course Name:	
(Oil and sugar crops)	
2. Course Code:	
OI&SU202	
3. Semester / Year:	
The Second course –Second stage(-2023-2024)	
4. Description Preparation Date:	
22-2-2024	
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: Dr. Rhiad Almalky	**Email:** ralmaliki@uowasit.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		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	Display screen + whiteboard
2	2		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	Lecture with explanation and presentation	Display screen + whiteboard
3	2		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	Display screen + whiteboard
4	2		Study of oil crops Sesame, sunflower (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting).	Lecture with explanation and presentation	Display screen + whiteboard
5	2		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	Display screen + whiteboard
6	2		Exam1		

7	**2**		**Safflower, (English and scientific name and family, economic importance - original habitat - environmental conditions - soil and crop service processes - harvesting). 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**	**Display screen + whiteboard**
8	**2**		**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**	**Display screen + whiteboard**
9	**2**		**Sugar crops Introduction (a brief overview of the history of sugar crops in general)**	**Lecture with explanation and**	**Display screen + whiteboard**
10	**2**		**Sugarcane (English and scientific name and family(A brief overview of the plant's development and its original habitat. Geographical distribution Climatic needs**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
11	**2**		**Suitable soil, planting time - seed quantity - factors .affecting cuttings Crop service operations (irrigation - fertilization)**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
12	**2**		**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**	**Display screen + whiteboard**

13	**2**		**Plant climatic needs Agricultural operations (suitable soil - planting time - .(planting method Suitable conditions for seed germination - seed quantity - agricultural cycle**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
14	**2**		**Crop service operations (thinning operations, weeding, fertilization, harrowing and (uprooting The processes of extracting sugar from sugar beets and manufacturing them include washing and cleaning - the cutting process – purification Sugar corn, its cultivation methods and its importance**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
15	**2**		**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.

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)	**Oil and sugar crops (Dr.. Tawakkol Younis Rizk Dr. Hikmat Abdul Ali)**
Main References (Sources)	**No**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
Plant ecology **-**	
2. Course Code:	
001720	
3. Semester / Year:2023- 2024	
First semester-second stage	
4. Description Preparation Date:2024	
22-2-2024	
5. Available Attendance Forms:	
In presence- **I attend full time**	
6. Number of Credit Hours (Total) / Number of Units (Total): 5 / 3.5	
7. Course Administrator's Name	
Name:Dr. Muhanad Kholbas	Email:rawafid.qasim : : albwmohanad@uowasit.ed
8. Course Objectives	
Course Objectives	**Learn about ecology and its relationship with - living organisms** **Identifying climatic and oceanic conditions and - their relationship primarily with plant organisms .in a sequential scientific manner** **Identify the effect of climatic conditions on the - growth of different plants** **Introducing students to environmental pollution, its types, types, harms, and future plans to avoid its risks.**
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**		**Definition of ecology and the study of environmental factors.**	**a lecture with an explanation, a presentation,**	**display screen + a blackboard**
2	**2**		**The ecosystem and its relationship to human ecology and the complete types of**	**a lecture with an explanation, a**	**display screen + a blackboard**
3	**2**		**Ecological succession, introduction, hydrological succession and arid**	**a lecture with an explanation, a**	**display screen + a blackboard**
4	**2**		**Climate, weather, dividing the regions of the world according to the**	**a lecture with an explanation, a**	**display screen + a blackboard**
5	**2**		**Plant efficiency in using light, effects of light on plants**	**a lecture with an explanation, a**	**display screen + a blackboard**
6	**2**		**Temperature, temperature efficiency, accumulated heat,**	**a lecture with an explanation, a**	**display screen + a blackboard**
7	**2**		**First month exam**		
8	**2**		**Water, crop water needs, factors affecting water consumption**	**a lecture with an explanation, a**	**display screen + a blackboard**
9	**2**		**The relationship of water to plants, division of plants**	**a lecture with an explanation, a**	**display screen + a blackboard**

10	**2**		**Wind, its effect on plants, harms and benefits of wind**	**a lecture with an explanation, a**	**display screen + a blackboard**
11	**2**		**Atmospheric humidity, the effect of humidity on crop growth.**	**a lecture with an explanation, a**	**display screen + a blackboard**
12	**2**		**Factors affecting atmospheric humidity, the effect of humidity on the**	**a lecture with an explanation, a**	**display screen + a blackboard**
13	**2**		**Environmental pollution, introduction, definition, nature of**	**a lecture with an explanation, a**	**display screen + a blackboard**
14	**2**		**Water pollutants and methods of treating them, soil pollution and methods of**	**a lecture with an explanation, a**	**display screen + a blackboard**
15	**2**		**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 (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:	
PLEC208	
3. Semester / Year:	
First semester - The first stage / 2023-2024	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
My presence in the jungle laboratory- I attend full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
(3 practical hours) 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. muhand Kholbas	Email: albwmohanad@uowasit.ed
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		Meteorological stations	Lecture with explanation and presentation	Display Screen
2	3		Solar radiation and measuring devices	Lecture with explanation and	Display Screen
3	3		Temperatures and devices for measuring them in the atmosphere	Lecture with explanation and	Display Screen
4	3		Exam1		
5	3		Temperature system and how to calculate it	presentation	Display Screen
6	3		Humidity and its measuring devices in the atmosphere and soil	Lecture with explanation and presentation	Display Screen
7	3		Evaporation and evaporation measuring devices	Lecture with explanation and	Display Screen
8	3		Precipitation, rain and dew measuring devices	Lecture with explanation and	Display Screen
9	3		Calculating the rainfall rate	Lecture with explanation and	Display Screen
10	3		Wind, devices for measuring wind speed and direction	Lecture with explanation and	Display Screen
11	3		Natural plant environments in the world and Iraq	Lecture with explanation and	Display Screen

12	**3**		**Forest vegetation in the world and Iraq**	**Lecture with explanation and**	**Display Screen**
13	**3**		**A field visit to the weather station**	**Lecture with explanation and**	**Display Screen**
14	**3**		**Meteorological stations**	**Lecture with explanation and**	**Display Screen**
15			**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.

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**

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...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:

Agricultural equipment and machinery/theoretical part
2. Course Code:
CRMEC3010
3. Semester / Year:
First semester 2023-2024 / second stage
4. Description Preparation Date:
22-2-2024
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: **dr. Ahmad Qati** Email: agatea@uowasit.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	**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:
CRMEC3010
3. Semester / Year:2022-2023
The First Semester-second stage
4. Description Preparation Date:2023
22-2-2024
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)
8. Course Objective

Course Objectives	• **Identify the types of agricultural tractor** • **their parts.** • **Introducing students to the agricultural** • **engine, the engine parts, and the fu each** • **part.** **Introducing students to different agricultural mac**

9. Teaching and Learning Strategies	
Strategy	**1 Education strategy collaborative concept planning.** **2. Brainstorming education strategy.** **3. Education Strategy Notes Series.**

10. Course Structure

Week	**Hours**	**Required learning**	**Unit or Subject Name**	**Learning**	**Evaluation Method**
1	**2**		**• Identify the ty of agricultu tractors**		
2	**2**		**• View the device and parts of the tug and the mea of transporti power in t**		
3	**2**		**• Watch the tug engine and lea about its fixed a**		
4	**2**		**• Identify the auxiliary devi attached to**		
5	**2**		**• See the gear box, the separato the differential device, and the final reduction device and how they work vic**		
6	**2**		**Exam1**		

7	**2**		**• See the gear box, the separator, t differential device, and the final reduction device and how they**		
8	**2**		**• Watch the Engine lubrication system and how maintain it.**		
9	**2**		**• Watch the engine cooling system and**		
10	**2**		**• Identify the fuel system and how it works**		
11			**• Identify the types of oil and fuel cleaners**		
12	**2**		**• Identifying t machines preparing the s**		
13	**2**		**• Watch t excavator a rotary plow, th**		
14	**2**		**• Identifying t parts of s preparation**		
15			**Exam2**		

11. Course Evaluation

Distribution is as follows: 25 marks for monthly and daily exams for the first semester, 25 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)	1. Agricultural mechanization. For agricultural sec school classes. The Egyptian Arabic Republic . 2 2 .Tractors and agricultural machinery for agric professional institutes. Republic of Yemen . 2010
Recommended Books and References (Scientific Journals, Reports...)	**NO**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Soil Fertility
2. Course Code:
GRAC301
3. Semester / Year:
first semester \ second stage
4. Description Preparation Date:

22-2-2024
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: Dr. Ahmad Aldahami Email	
8. Course Objectives	
Course Objectives	• **Identify the types of fertilizers** • **The most important interactions of fertilizers in the soil**
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**		Nutrient elements and classification	Lecture with explanatio	daily exam
2	**2**		Source of nutrients	Lecture with explanatio	daily exam
3	**2**		Factors affecting soil fertility	Lecture with explanatio	daily exam

4	**2**		Soil fertility and plant growth	Lecture with explanation presentation	daily exam
5					Exam1
6	**2**		Nitrogen of soil and fertilizer		
7 – 8	**2**		Phosphorus of soil and fertilizers	Lecture with explanation presentation	daily exam
9 – 10	**2**		Potassium of soil and fertilizers	Lecture with explanatio	daily exam
11	**2**		Sulfur of soil and fertilizers	Lecture with explanatio	daily exam
12 – 13	**2**		Trace elements	Lecture with explanatio	daily exam

14	**2**		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**

Course Description Form

1. Course Name:	
Irrigation and drainage	
2. Course Code:	
LANRE304	
3. Semester / Year:	
Second semester \ second stage	
4. Description Preparation Date:	
22-2-2024	
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. Layth Salam	**mail :**
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	
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
1	2	The concept of irrigation, irrigation old and new			
2	2	sources of irrigation water. Irrigation water quality			
3	2	Physical properties of soil related to irrigation			
4	2	Water-soil relationship, soil moisture constants, water movement in soil, water tip			
5		Exam1			
6	2	Plant water consumption Measuring water			
7	2	Water requirements and irrigation scheduling			

8	**2**	**Transmission and distribution of irrigation water, movement of water in pipes and open channels**			
9	**2**	**modern irrigation methods**			
10-11	**2**	**The concept of drainage, the justification for the establishment of drains, the relationship of drainage to plant**			
12	**2**	**Drainage and soil salinity, leaching requirements and salt balance**			
13	**2**	**Types of drains, their classification, and the objectives of their establishment**			
14	**2**	**Designs of open and covered drains systems and calculating the distances between drains**			
15		**Exam2**			
1	**3**	**Survey the land and draw a contour map**			

2	**3**	**Measuring levels and calculating the amount of excavation and backfilling for an irrigation channel**			
3		**Measuring soil moisture**			
4	**3**	**Measuring water in different ways. raft, weir, manhole, parachal channel, drain pumps.**			
5		**Exam1**			
6		**applications in calculating water consumption. Crop Wat application in ET0 acc gauge water tip ount**			
7	**3**	**applications in calculating the water needs of plants**			
8	**3**	**applications in calculating the amount of water and irrigation periods**			

9	**3**	**applications in calculating the adequacy, efficiency and consistency of irrigation water distribution**			
10	**3**	**Design of the canals: an earthen irrigation canal. Lined irrigation channel**			
11	**3**	**Investigations required for the construction of drains, exploratory and operational investigations**			
12	**3**	**Measurement of saturated hydraulic conductivity in the laboratory and field**			
13	**3**	**open drains design and closes**			
14	**3**	**Designs of open and covered drains systems**			
15	**3**	**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:	
Plant Taxonomic)	
2. Course Code:	
PTAXO201	
3. Semester / Year:	
The first course- second stage (-2023-2024)	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
My presence in Plant Classification Lab.**- I attend full time**	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 hours per week - 3 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Dr. Hussien Almtarfi	**Email: htarish@uowasit.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**		**Fundamentals of Plant Classification and Taxonomic Categories**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
2	**3**		**Scientific nomenclature - plant classification**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
3	**3**		**The roots Morphological of roots- types of roots**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
4	**3**		**Stems - types of stems - modifications of stems**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
5	**3**		**The leaf- types of leaves- Types of blade in leaves- leaf margins**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
6	**3**		**- leaf Apex- leaf Venation- Leaves Arrangment- leaf mutations**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

7	**3**		**Flower flower components**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
8	**3**		**A field visit to nearby crop fields to learn about plants**		
9	**3**		**types of flowers**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
10	**3**		**Aestivation Symmetry**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
11	**3**		**Placentation**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
12	**3**		**Inflorescences - types of inflorescences**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
13	**3**		**The fruit - types of fruits - The stages of fruition**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

14	**3**		**Seeds - Classification of seeds- Diagnose and distinguish crop seeds**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
15	**3**		**A visit to one of the nearby nurseries to learn about different plants and their parts**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**

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)	**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:
Plant Taxonomic) - Second stage - Field Crops Department - College of Agriculture - University of Basra
2. Course Code:
001720
3. Semester / Year:

The first course- second stage (-2023-2024)
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
My presence in Plant Taxonomy 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: Dr. Nada mohammad Email:
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		Fundamentals of Plant Classification and Taxonomic Categories	Lecture with explanation and presentation	Display screen + whiteboard

2	**3**		**Scientific nomenclature - plant classification**	**Lecture with explanation and presentation**	**Display screen + whiteboard**
3	**3**		**The roots Morphological of roots- types of roots**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
4	**3**		**Stems - types of stems - modifications of stems**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
5	**3**		**The leaf- types of leaves- Types of blade in leaves- leaf margins**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
6	**3**		**- leaf Apex- leaf Venation- Leaves Arrangment- leaf mutations**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
7	**3**		**Flower flower components**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live simple**
8	**3**		**A field visit to nearby crop fields to learn about plants**		

9	**3**		**types of flowers**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
10	**3**		**Aestivation Symmetry**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
11	**3**		**Placentation**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
12	**3**		**Inflorescences - types of inflorescences**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
13	**3**		**The fruit - types of fruits - The stages of fruition**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**
14	**3**		**Seeds - Classification of seeds- Diagnose and distinguish crop seeds**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**

15	**3**		**A visit to one of the nearby nurseries to learn about different plants and their parts**	**Lecture with explanation and presentation**	**Display screen + whiteboard + Live symple**

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)	**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**

1. Course Name: -
Legume crops
2. Course Code:
LEGCR309
3. Spring / Year:
Second semester – third stage 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
I attend full time

6. Number of Credit Hours (Total) 3 practical hours per week. Total 45

/ Number of units (total) 1:5

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

Name:Dr. Hussien QAlmtarfi Email: htarish@uowasit.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 good job

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.**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1		The importance of legumes		theoretical and practical power point	Daily and monthly tests
2		Beans - botanical description - varieties -		Field or laboratory	
3		Lentils - botanical description - varieties -			
4		Chickpeas - botanical description - varieties -			

5		**Assignment -1**			
6		Field pistachios - botanical description -			
7		Harthman - botanical description - varieties			
8		Soybeans - botanical description - varieties -			
9		**Assignment 2**			
10		Beans - botanical description - varieties -			
11		Peas - botanical description - varieties -			
12		Cowpeas - botanical description - varieties - diseases			
13		**Assignment 3**			
14		Intercropping		Assignment 3	
15		Harvesting and storing			
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)		**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, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name
: *Legume Crops lab*
2. Course Code:
LEGCR309
3. Semester / Year:2023- 2024
Second semester – third stage 2023-2024
4. Description Preparation Date
22-2-2024

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: Dr. Hussien almtarfi	Email:
8. Course Objectives	
Course Objectives	**Definition of legume crops, and what is -1 their importance in human food** **The importance of legume crops to the -2 soil** **Classification of crops of the leguminous -3 family according to the growing season** **4- The importance of crops of the leguminous family as animal feed**
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**	**Leguminous seed crops and their importance**		**a lecture with an explanation, a presentation,**	**display screen + a blackboard**
2	**2**	**Nitrogen fixation, root nodule formation**		**a lecture with an explanation, a**	**display screen + a blackboard**

3	**2**	**Intercropping**		**a lecture with an explanation, a**	**display screen + a blackboard**
4	**2**	**Beans, origin, economic importance, uses**		**a lecture with an explanation, a**	**display screen + a blackboard**
5	**2**	**Nutritional value of beans, varieties, genetic sources**		**a lecture with an explanation, a**	**display screen + a blackboard**
6	**2**	**Nutritional value of beans, varieties, genetic sources**		**a lecture with an explanation, a**	**display screen + a blackboard**
7			**First-month exam**		
8	**2**	**Chickpeas, economic importance, uses, components of the**		**a lecture with an explanation, a**	**display screen + a blackboard**
9	**2**	**Chickpea crop varieties, nitrogen fixation in chickpeas, maturity**		**a lecture with an explanation, a**	**display screen + a blackboard**
10	**2**	**Mung beans, economic importance, nutritional value,**		**a lecture with an explanation, a**	**display screen + a blackboard**
11	**2**	**Cowpeas, economic importance, nutritional value, maturity, and**		**a lecture with an explanation, a**	**display screen + a blackboard**
12	**2**	**Soybeans, economic importance, nutritional value, maturity and**		**a lecture with an explanation, a**	**display screen + a blackboard**
13	**2**	**Field pistachios, economic importance, nutritional value,**		**a lecture with an explanation, a**	**display screen + a blackboard**
14	**2**	**Peas, economic importance, nutritional value, maturity and**		**a lecture with an explanation, a**	**display screen + a blackboard**

15			**Second month exam**	**a lecture with an explanation, a**	**display screen + a blackboard**

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)	**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:
design and analysis of agriculture experiments
2. Course Code:
FCRDE306
3. Semester / Year:2023- 2024
First semester- third stage
4. Description Preparation Date:2023
22-2-2024
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	
Dr. nabel Lahmod	
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		**a lecture with an explanation, a presentation,**	**display screen + a blackboard**
2	**2**	Principles of Statistics.		**a lecture with an explanation, a**	**display screen + a blackboard**
3	**2**	Statistical procedures for agricultural research.		**a lecture with an explanation, a**	**display screen + a blackboard**

4	**2**	Measures of dispersion and centering		**a lecture with an explanation, a**	**display screen + a blackboard**
5	**2**	Introduction to agricultural experiment design		**a lecture with an explanation, a**	**display screen + a blackboard**
6	**2**	Completely Randomized Design (applications)		**a lecture with an explanation, a presentation**	**display screen + a blackboard**
7			**First-month exam**		
8	**2**	Tests suggested after experimentation		**a lecture with an explanation, a**	**display screen + a blackboard**
9	**2**	Randomized complete block design		**a lecture with an explanation, a**	**display screen + a blackboard**
10	**2**	The relative efficiency of a complete randomized block design		**a lecture with an explanation,**	**display screen + a blackboard**
11	**2**			**a lecture with an explanation,**	**display screen + a blackboard**
12	**2**	The relative efficiency of the Latin square design compared to the		**a lecture with an explanation, a**	**display screen + a blackboard**
13	**2**	Latin Squair Design		**a lecture with an explanation, a**	**display screen + a blackboard**
14	**2**	Factorial Experiments		**a lecture with an explanation, a**	**display screen + a blackboard**
15			**Second month exam**	**a lecture with an explanation, a**	**display screen + a blackboard**
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)	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:
practical fodder crops –
2. Course Code:
FOCRO305
3. Semester / Year:2023- 2024
First semester-third stage
4. Description Preparation Date:2023
22-2-2024
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:
8. Course Objectives

Course Objectives	**1- definition of fiber crops ,and whatis their importance in industries** **2-division of fiber crops and their importance to humans** **3- classification of fiber crops**

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	Learning Method	Evaluation Method
1	**3**	**Divination of fiber**		**a lecture explain with view models**	**display screen + a blackboard**
2	**3**	**Seeds Fibers**		**a lecture explain with view models**	**display screen + a blackboard**
3	**3**	**The effect of environmental factors on cotton growth**		**a lecture explain with view models**	**display screen + a blackboard**
4	**3**	**Agricultural operations**		**a lecture explain with view models**	**display screen + a blackboard**
5	**3**	**Topping**		**a lecture explain with view models**	**display screen + a blackboard**
6	**3**	**Genie and its types**		**a lecture explain with view models**	**display screen + a blackboard**

7		**Exam**	**First-month exam**		
8	**3**	**Stem fibers**		**a lecture explain with view models**	**display screen + a blackboard**
9	**3**	**Crop service operations**		**a lecture explain with view models**	**display screen + a blackboard**
10	**3**	**General properties of fibers**		**a lecture explain with view models**	**display screen + a blackboard**
11	**3**	**Jute**		**a lecture explain with view models**	**display screen + a blackboard**
12	**3**	**Kanaf (Juljule)**		**a lecture explain with view models**	**display screen + a blackboard**
13	**3**	**Cannabis**		**a lecture explain with view models**	**display screen + a blackboard**
14	**3**	**Leaf fiber**		**a lecture explain with view models**	**display screen + a blackboard**
15		**Exam**	**Second month exam**		**display screen + a blackboard**

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)	Fiber crops ,written by Dr.hikmat abdel ali
Main references (sources)	Fiber crops ,written by Dr. ayad talaat shaker
Recommended supporting books and references (scientific journals, reports...)	Scientific journals with field of fiber crops

Electronic references, websites	Some research and articles on fiber crops

1. Course Name:	
fodder crops	
2. Course Code:	
3. Semester / Year:2023- 2024	
First semester-third stage	
4. Description Preparation Date:2023	
22-2-2024	
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: Email:	
8. Course Objectives	
Course Objectives	**1- definition of fiber crops ,and whatis their importance in industries** **2-division of fiber crops and their importance to humans** **3- classification of fiber crops**
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	Terms and definitions			
1	**3**	**The importance of forage crops in agricultural cycles and soil maintenance**		**Lecture**	**display screen + a blackboard**
2	**3**	**The importance of legume forage crops**		**Lecture**	**lecture**
3	**3**	**Alfalfa crops**		**Lecture**	**lecture**
4	**3**	**Berseem Egyptian crops**		**Lecture**	**lecture**
5	**3**	**Sweet clover crops and soybean crops**		**Lecture**	**lecture**
6	**3**	**Exam**		**Lecture**	**lecture**
7		**The importance of grass forage crops Barley crop**		**Lecture**	**lecture**
8	**3**	**Oat crop**		**Lecture**	**lecture**
9	**3**	**Corn and sorghum crops**		**Lecture**	**lecture**

10	**3**	**Sudan grass and millets crop**		**Lecture**	**lecture**
11	**3**	**Forage mixtures**		**Lecture**	**lecture**
12	**3**	**Pastures and their types**		**Lecture**	**lecture**
13	**3**	**Range Condition Estimation methods**		**Lecture**	**lecture**
14	**3**	**Terms and definitions**		**Lecture**	**lecture**
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.

12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	Fiber crops ,written by Dr.hikmat abdel ali
Main references (sources)	Fiber crops ,written by Dr. ayad talaat shaker
Recommended supporting books and references (scientific journals, reports...)	Scientific journals with field of fiber crops
Electronic references, websites	Some research and articles on fiber crops

Course Description Form

1. Course Name:
(Theoretical Genetics
2. Course Code:
GENE302

3. Semester / Year:
first Semester-third stage (2023-2024)
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms: Attending college within practical microbiology laboratories **Full time**
My presence in Hall 2
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)

8. Course Objectives	
Course Objectives	• **Learn about genetics and related sciences** • **Learn about Mendel's laws** • **Study of pollination methods with 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 outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	**2**		**Introduction to genetics - definition of genetics - its benefits - its connection with other sciences. The concept of Phenotype and Genotype - Test cross - cross multiplication- retrograde crosstalk.**	**Lecture with explanation in presentation**	**Display + Blackboard**

2	**2**		**Mendelian inheritance - Mendel's first law - Mendel's second law - types of sovereignty.**	**Lecture with explanation in presentation**	**Display + Blackboard**
3	**2**		**Overlap of allelic genes - overlap of non-allelic genes - different cases of superiority.**	**Lecture with explanation in presentation**	**Display + Blackboard**
4	**2**		**Multiple alleles-Examples of multiple alleles-Sex chromosomes-Sex systems in organisms-Sex-linked traits-Sex-affected traits-Sex-determining traits.**	**Lecture with explanation in presentation**	**Display + Blackboard**
5	**2**		**Exam1**		
6	**2**		**Genetic maps - How to draw genetic maps - The importance of genetic maps Linkage and crossing over - types of linkage - the mechanics of crossing over - theories that explain the phenomenon of genetic crossing over**	**Lecture with explanation in presentation**	**Display + Blackboard**

7	**2**		**Genetic mutations - their types - their origin - their means of occurrence - their importance**	**Lecture with explanation in presentation**	**Display + Blackboard**
8	**2**		**Cytoplasmic Heredity Examples of Cytoplasmic Inheritance Quantitative Inheritance Examples of Quantitative Inheritance.**	**Lecture with explanation in presentation**	**Display + Blackboard**
9	**2**		**Genetic material in living organisms - characteristics of living matter - structure of DNA - structure of RNA - the most important differences between them.**	**Lecture with explanation in presentation**	**Display + Blackboard**
10	**2**		**Evidence that proves that DNA is the genetic material in living organisms - Evidence that proves that RNA is the genetic material in some viruses.**	**Lecture with explanation in presentation**	**Display + Blackboard**
11	**2**		**DNA Replication (DNA cloning) - Hypotheses of replication methods - Semi-conservative replication - Conservative method - RNA transcription from DNA**	**Lecture with explanation in presentation**	**Display + Blackboard**

12	**2**		**Protein synthesis - transcription and translation.**	**Lecture with explanation in presentation**	**Display + Blackboard**
13	**2**		**Genetic engineering - its benefits - its determinants - how to carry out the process of genetic transfer - applications of genetic engineering.**	**Lecture with explanation in presentation**	**Display + Blackboard**
14			**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.

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	**1-- General inheritance** **2-- Genetics and breeding of plants Dr.**
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:	
practical inheritance	
2. Course Code:	
GENE302	
3. Semester / Year:2023- 2024	
First semester- third stage	
4. Description Preparation Date:2024	
22-2-2024	
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: Dr. Naser Alzamly	Email: nafahim@uowasit.edu.iq
8. Course Objectives	
Course Objectives	**1- definition of genetics ,and what is its importance in agricultural crops** **2- laws of inheritance and their application** **3- determination sex and relating sex**
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 in genetics**		**a lecture with lssues solving**	**display screen + a blackboard**
2	**3**	**Mandell's first law**		**a lecture with lssues solving**	**display screen + a blackboard**
3	**3**	**Mandell's second law**		**a lecture with lssues solving**	**display screen + a blackboard**
4	**3**	**Types of Dominance**		**a lecture with lssues solving**	**display screen + a blackboard**
5	**3**	**Branching Method**		**a lecture with lssues solving**	**display screen + a blackboard**
6	**3**	**Chi – Squares test**		**a lecture with lssues solving**	**display screen + a blackboard**
7		**Exam**	**First-month exam**		
8	**3**	**Genetic Interaction**		**a lecture with lssues solving**	**display screen + a blackboard**
9	**3**	**Multiple alleles**		**a lecture with lssues solving**	**display screen + a blackboard**
10	**3**	**Sex designation & sex linkage**		**a lecture with lssues solving**	**display screen + a blackboard**

11	**3**	**Linkage and crossing over**		**a lecture with lssues solving**	**display screen + a blackboard**
12	**3**	**Genetic mapping**		**a lecture with lssues solving**	**display screen + a blackboard**
13	**3**	**Quantitative genetics**		**a lecture with lssues solving**	**display screen + a blackboard**
14	**3**	**Dead genes**		**a lecture with lssues solving**	**display screen + a blackboard**
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.	
12. Learning and Teaching Sources	
Required textbooks (methodology, 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 supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on genetics

Course Description Form

1. Course Name:
Mechanization of field crops - the theoretical part
2. Course Code:
CRMEC3010

3. Semester / Year:
Second semester-third stage 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
In-person education-full time
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:
8. Course Objectives

Course Objectives	• **Identifying soil preparation machines for primary treatments (tillage machines)** • **Identify soil preparation machines for secondary treatments (soil smoothing machines)**
9. Teaching and Learning Strategies	
Strategy	**1 -Involving the student in discussion sessions.** **2- Developing the student's abilities to reach the stage of analysis and conclusion.** **3 -Creating a competitive atmosphere among students in their answers to scientific topics when asked.**
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation
The first	**2**	**Mechanization of field crops - the theoretical part**	Getting to know the machines for preparing the soil for the initial treatments	**Lecture and presentation**	**Quarterly exam + reports**

The second	2	Mechanization of field crops - the theoretical part	moldboard plow types and regulations	**Lecture and presentation**	**Quarterly exam + reports**
The third	2	Mechanization of field crops - the theoretical part	Disk plow types and regulations	**Lecture and presentation**	**Quarterly exam + reports**
The fourth	2	Mechanization of field crops - the theoretical part	chisel plow and its regulations	**Lecture and presentation**	**Quarterly exam + reports**
The fifth			**Exam1**		
The sixth	2	Mechanization of field crops - the theoretical part	Getting to know soil preparation machines for secondary treatments (soil bulverization Rotary plow how to operate and regulations	**Lecture and presentation**	**Quarterly exam + reports**
The seventh	2	Mechanization of field crops - the theoretical part	Disc harrows types and regulations	**Lecture**	**Quarterly exam + reports**
The eighth	2	Mechanization of field crops - the theoretical part	Automatic reciprocating harrow	**Lecture and presentation**	**Quarterly exam + reports**
The ninth	2	Mechanization of field crops - the theoretical part	soil grinder	**Lecture and presentation**	**Quarterly exam + reports**
The tenth	2	Mechanization of field crops - the theoretical part	Learn about special equipment	**Lecture and presentation**	**Quarterly exam + reports**
The eleventh	2	Mechanization of field crops - the theoretical part	Subsoiled plow	**Lecture and presentation**	**Quarterly exam + reports**
The twelfth	2	Mechanization of field crops - the theoretical part	Ditcher opener	**Lecture and presentation**	**Quarterly exam + reports**

The Thirteenth	2	Mechanization of field crops - the theoretical part	The opening of Maruz and Batan	**Lecture and presentation**	**Quarterly exam + reports**
The fourteenth	2	Mechanization of field crops - the theoretical part	Combines machines, their types and the purpose of their use Article review	**Lecture and presentation**	**Quarterly exam + 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)	Soil preparation equipment book - Aziz Ramo Al-Banna
Main References (Sources)	Agricultural machines and machinery book - Yassin Hashem Al-Tahan
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**https://www.motorscaffe.com/2019/11/types-of-agricultural-plows-pdf.html**

Course Description Form

1. Course Name:
Mechanization of field crops - The practical part
2. Course Code:
3. Semester / Year:
Second semester- third stage 2023-2024

4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
In-person education- full time
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours- 3 hours
7. Course Administrator's Name (Mention All, If More Than One Name)
8. Course Objectives

Course Objectives	• **Identifying soil preparation machines for primary treatments (tillage machines)** • **Identify soil preparation machines for secondary treatments (soil smoothing machines)**

9. Teaching and Learning Strategies	
Strategy	**1 -Involving the student in discussion sessions.** **2- Developing the student's abilities to reach the stage of analysis and conclusion.** **3 -Creating a competitive atmosphere among students in their answers to scientific topics when asked.**

10. Course Structure

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
The first	**3**	**Mechanization of field crops - the theoretical part**	Getting to know the machines for preparing the soil for the initial treatments	**Lecture and presentation**	**Quarterly exam + reports**
The second	3	Mechanization of field crops - the theoretical part	moldboard plow types and regulations	**Lecture and presentation**	**Quarterly exam + reports**

The third	3	Mechanization of field crops - the theoretical part	Disk plow types and regulations	**Lecture and presentation**	**Quarterly exam + reports**
The fourth	3	Mechanization of field crops - the theoretical part	chisel plow and its regulations	**Lecture and presentation**	**Quarterly exam + reports**
The fifth			**Exam1**		
The sixth	3	Mechanization of field crops - the theoretical part	Rotary plow how to operate and regulations Getting to know soil preparation	**Lecture and presentation**	**Quarterly exam + reports**
The seventh	3	Mechanization of field crops - the theoretical part	Disc harrows types and regulations	**Lecture**	**Quarterly exam + reports**
The eighth	3	Mechanization of field crops - the theoretical part	Automatic reciprocating harrow	**Lecture and presentation**	**Quarterly exam + reports**
The ninth	3	Mechanization of field crops - the theoretical part	soil grinder	**Lecture and presentation**	**Quarterly exam + reports**
The tenth	3	Mechanization of field crops - the theoretical part	Learn about special equipment	**Lecture and presentation**	**Quarterly exam + reports**
The eleventh	3	Mechanization of field crops - the theoretical part	Subsoiled plow	**Lecture and presentation**	**Quarterly exam + reports**
The twelfth	3	Mechanization of field crops - the theoretical part	Ditcher opener	**Lecture and presentation**	**Quarterly exam + reports**
The Thirteenth	3	Mechanization of field crops - the theoretical part	The opening of Maruz and Batan	**Lecture and presentation**	**Quarterly exam + reports**
The fourteenth	3	Mechanization of field crops - the theoretical part	Combines machines, their types and the Article review purpose of their use	**Lecture and presentation**	**Quarterly exam + 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)	Soil preparation equipment book - Aziz Ramo Al-Banna
Main References (Sources)	Agricultural machines and machinery book - Yassin Hashem Al-Tahan
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**https://www.motorscaffe.com/2019/11/types-of-agricultural-plows-pdf.html**

Course Description Form

1. Course Name:
Seed technology
2. Course Code:
SETECH307

3. Semester / Year:
Second semester-third stage 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
In the quality laboratory-full time
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:
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**		Getting to know the seeds: their shapes, colors, sizes, ways of spreading	**Lecture with explanation and**	
2	**3**		Sampling .	Lecture with explanation and presentation	
3	**3**		Examination of laboratory and standard germination and the effect of some plant hormones on it	Lecture with explanation and presentation	

4	**3**		Hygiene check	Lecture with explanation and presentation	
5			Assignment 1		
6	**3**		Checking the moisture content of the seed	Lecture with explanation and presentation	
7	**3**		Testing the electrical conductivity of the seed	Lecture with explanation and presentation	
8	**3**		Testing the genetic purity of the seed	Lecture with explanation and presentation	
9			Assignment 1		
10	**3**		Seed strength tests: Germination test to accelerate age, cold test, nitrazolium test (vitality test), brick	Lecture with explanation and presentation	
11	**3**		seed certification.	Lecture with explanation and presentation	
12	**3**		field inspection.	Lecture with explanation and presentation	
13	**3**		Assignment 1		
14	**3**		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: -	
Technology of Seeds	
2. Course Code:	
SETECH307	
3. Semester / Year: Second / 2023-2024	
Second semester-third stage	
4. Description Preparation Date:	
22-2-2024	
5. Available Attendance Forms:	
Mandatory-full time	
6. Number of Credit Hours (Total) /	
30 hr.Number of Units (Total) 3.5-5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name:Dr. Rheid almalky Email:	
8. Course Objectives	
Course Objectives	• Providing the student with practical and theoretical information on field management. • Teaching the student the basic sciences of field crops.
9. Teaching and Learning Strategies	

Strategy	**-Working to graduate students with concepts in the field of crops production in a good manner-** **- Introducing students to the types of crops 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 of seeds testing.** **-Introducing the student to the nature of dealing with seeds used in**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1		Introduction to seed technology - Definition of seed technology - Objectives of seed technology - Definition of seed science - Seed production - Grain technology - Definition of technology -		theoretical and practical power point lectures Discussions,	Daily and monthly tests
2		The centres of origin of cereal crops in the world The productivity of cereal crops in Iraq and the reasons for its decline			
3		Chemical composition of seeds and its relationship to their value as seeds - The most important chemical components of seeds - Diagnosis of seeds			

4		Seed physiology - germination – types of germination - requirements for seed germination - germination when appropriate conditions are available - growth regulators and seeds - the role of growth regulators in germination			
5		**Assignment -1**			
6		Dormancy of seeds - Benefits of seed cumin - Harmful effects of seed dormancy - Types of cumin - Causes of dormancy - Methods of breaking latency - Methods of breaking dormancy - Vitality of seeds - Testing of tetrazolium - Strength of seeds - Factors affecting the lifespan of seeds			
7		Seeds - the importance of seeds - augmentation with seeds - field foundations for multiplication of seeds - farms between commercial hybrids and open-pollinated varieties - quality of agricultural seeds			
8		Certification of seeds - Production of certified seeds - Specifications of fields for the production of certified seeds - Method of cultivating varieties - Standards or measurements			

9		Field inspection - How to conduct a field inspection - Inspection dates - Exotic species - Diseases - General condition of the crop - Isolation distances - Agricultural treatments - Previous crops - Cleaning the field - Tests of seeds			
10		**Assignment 2**			
11		Preparation of seeds - Harvesting and threshing - Cleaning and grading seeds - Drying seeds -			
12		Basic rules for the production of seeds of the most important			
13		Storage - storing seeds for agricultural purposes - seed treatments and seed storage - the most			
14		Assignment 3			
15		Instructions for Handling Seeds for Planting			

11. Course Evaluation	
Distribution of the score out of 30 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**

Main References (Sources)	1-Seed technology Riyad Jabbar Mansour Al-Maliki College of Agriculture - University of Wasit, 2020 2-. Seed technology Jalal Hamid Hamza College of Agriculture - University of Baghdad-2017 3-Grop Seeds Production and Quality Abdullah K Al-Fakhry Ahmad S Khalaf, 1983 4-General principles for breeding and improving the productivity of Cereals and legumes crops Faisal M M Al-Tahir Maysoun M Saleh Salih H F Al-Salim Reem N Al- Edelbi. College of Agriculture - University of Muthanna-2018
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Grain crops
2. Course Code:
GRAC301
3. Semester / Year:2023- 2024
First semester-third stage
4. Description Preparation Date:2024
22-2-2024
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: Dr. Rhid Almalki
8. Course Objectives

Course Objectives	• Identify the methods of growing each crop and the factors affecting the productivity of each crop • Methods used in storing and marketing important grain crops in the world • Knowing the botanical description of each field crop Make reports on specific topics related to the field crop
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**	**Botanical division of cereal crops**		**a lecture with lssues solving**	**display screen + a blackboard**
2	**3**	**Stages of growth of cereal crops**		**a lecture with lssues solving**	**display screen + a blackboard**
3	**3**	**Grain storage methods**		**a lecture with lssues solving**	**display screen + a blackboard**

4	**3**	**Botanical description of the wheat crop**		**a lecture with lssues solving**	**display screen + a blackboard**
5	**3**	**Botanical description of the Bariey crop**		**a lecture with lssues solving**	**display screen + a blackboard**
6	**3**	**A scientific visit to an agricultural field**			
7		**Botanical description of the Rice crop**		**a lecture with lssues solving**	**display screen + a blackboard**
8	**3**	**Exam**	**First-month exam**		
9	**3**	**Botanical description of the Corn or maize crop**		**a lecture with lssues solving**	**display screen + a blackboard**
10	**3**	**Botanical description of the Sorghum crop**		**a lecture with lssues solving**	**display screen + a blackboard**
11	**3**	**Botanical description of the Oats crop**		**a lecture with lssues solving**	**display screen + a blackboard**
12	**3**	**A visit to the Seed Certification Authority**			
13	**3**	**Exam**	**-month exam**		
14	**3**	**Botanical description of the Rye crop**		**a lecture with lssues solving**	**display screen + a blackboard**
15		**Botanical description of the Pearmillet crop**		**a lecture with lssues solving**	**display screen + a blackboard**
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)	1-Cereals and Pulses Crops (Practical Part), Dr. Kamel Muhammad Al-Khafaji,
Main references (sources)	Grain production. Mr. Dr. Abdul Hamid Muhammed Hassanein, Faculty of Agriculture - Al-Azhar University, Arab Republic of Egypt 2019
Recommended supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on Grain

Course Description Form

1. Course Name: -
Grans Crops
2. Course Code:
GRAC301
3. Semester / Year:
First semester – third stage / 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
Mandatory- full time
6. Number of Credit Hours (Total) /
30 hr.Number of Units (Total) 3.5
7. Course Administrator's Name (Mention All, If More Than One Name)

8. Course Objectives	
Course Objectives	• Providing the student with practical and theoretical information on field management. • Teaching the student the basic sciences of field crops. • Teaching students to work in the future in ministries and institutions related to agricultural sciences. Preparing scientific and academic researchers in the field of field crop management.
9. Teaching and Learning Strategies	
Strategy	**-Working to graduate students with concepts in the field of crops production in a good manner-** **- Introducing students to the types of crops 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 of seeds testing.** **-Introducing the student to the nature of dealing with seeds used in**

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1		**The economic importance of grain crops in Iraq and the world**		theoretical and practical power point	Daily and monthly tests
2		The centres of origin of cereal crops in the world The productivity of cereal crops in Iraq and the reasons for its			
3		Wheat Crop- Economic importance - Botanical description Environmental			
4		Loding and Tillering Factors of production in Grain Crops			
5		**Assignment -1**			

6		Barley Crop- Economic importance - Botanical description Environmental requirements- Maturity and Harvesting			
7		Oats Crop- Economic importance - Botanical description Environmental requirements- Maturity and Harvesting			
8		Rye Crop- Economic importance - Botanical description Environmental requirements- Maturity and Harvesting			
9		Rice Crop- Economic importance - Botanical description Environmental requirements- Maturity and Harvesting			
10		**Assignment 2**			
11		Corn Crop- Economic importance - Botanical description Environmental			
12		Sorghum Crop- Economic importance Botanical description - Environmental			
13		Pear millet Crop- Economic importance - Botanical description- Environmental			
14		Assignment 3			
15		Seeds production of Wheat crop			
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.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	1-Grais and legumes crops Nebel Ali Hallel ، Al-motawly Abdlia Al-motawly ، Majdy Mohammed Shfeege andWajeeh ، Abd-Alazeem Al-Morshady- Cairo University - 2015 2-Plant nutrition guide. Youssef Muhammad Abu Dahi and Moayed Ahmed. Al-Younis. College of Agriculture - University of Baghdad, 1988 3-Production and improvement of field crops (Part One) Abdul Hamid Ahmed. Al- Younis, University of Baghdad - College of Agriculture 1993
Recommended Books and References (Scientific Journals, Reports...)	**no**
Electronic References, Websites	**no**

1. Course Name:–
FIELD CROP INSECT
2. Course Code:
3. Semester / Year:2023- 2024
First semester- third stage

4. Description Preparation Date:2024
22-2-2024
5. Available Attendance Forms:
in presence-**full time**
6. Number of Credit Hours (Total) / Number of Units (Total):
5 / 2
7. Course Administrator's Name
Name:
8. Course Objectives

Course Objectives	**Knowing the general characteristics of insects and the ladder of their development** **• Study the most important insects that infect field crops, study their harm and combat them** **Knowledge of general preventive and therapeutic methods to get rid of harmful insects**

9. Teaching and Learning Strategies	
Strategy	**1- PowerPoint presentation 2- Video presentation 3- Field visits**

10. Course Structure

Week	**Hours**	**Required learning outcomes**	**Unit or Subject Name**	**Learning Method**	**Evaluation Method**
1	**2**		**A general introduction to insects and their classification, the pest and its types, the harms and benefits of insects**	**PowerPoint**	

2	**2**		**General insects: earthworms, locusts, borers**		
3	**2**		**Insects of the Poaceae family (wheat and barley)**		
4	**2**		**Corn insects**		
5	**1**		**First-month exam**		
6	**2**		**Insects of the legume family**		
7	**2**		**Sugar beet insects**		
8	**2**		**Sesame, safflower and tobacco insects**		
9	**1**		**Second month exam**		
10	**2**		**Cotton insects**		
11	**2**		**Sunflower insects**		
12	**3**		**Warehouse insects, part one**		
13	**3**		**Warehouse insects, part two**		

14	**3**		**Reasons for the widespread spread of insects and means of**		
15	**3**		**General pest control methods**		

11. Course Evaluation
Grade distribution out of 50: 30 theoretical grades distributed as follows: 20 monthly exams, 5 .reports, 2 attendance, 3 exams 20 practical grades distributed as follows: 15 monthly exams, 2 attendance, 3 exams.

12. Learning and Teaching Sources	
Required textbooks (methodology, if any)	Book of field crop insects. Written by Dr. Salem Jamil Jarjis Dr. Hamza Kazem Abbas
Main references (sources)	Crop insects book Dr. Iyad Al-Hajj Youssef Banan Rakan Dabdoub 2010
Recommended supporting books and references (scientific journals, reports...)	Scientific publications and research
Electronic references, websites	No

Course Description Form

1. Course Name:
crop insects
2. Course Code:
3. Semester / Year:2023-2024
First semester - third stage
4. Descrip□on Prepara□on Date:
22-2-2024
5. Available Atendance Forms:
Full □me (lecture prac□al)
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week for 15weeks
7. Course Administrator's Name (Men□on All, If More Than One Name)
Name:

8. Course Objec◆ves	
Course Objec◆ves	**- Providing students with the skill of applying** **- modern** **- iden◆fy new infec◆ons** **- Displaying models of hardened insects or** **- pictures of them** **Insects and the damage they cause to economic crops**

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evalua◆on Method
1	3	students with the skill of applying modern in iden◆fy new infec◆ons Skill expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they cause to economic crops	History of field crop	Explaining scien◆fic material through giving lectures	Monthly and end semester exams
2	3	students with the skill of applying modern in iden◆fy new infec◆ons Skill expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they	Insects economic		Monthly and end semester exams

3	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they cause to economic crops	importanc e of field crop insects		Monthly and end semester exams
4	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they cause to economic crops	Disturbing insects		Monthly and end semester exams

5	3		Exam1		
6	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they cause to economic crops	Grass crops insects		Monthly and end semester exams
7	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students	Corn insects		Monthly and end semester exams
8	3	students with the skill of applying modern in iden◆y new infec◆ons Skill expansion students	Leguminous crops insects		Monthly and end semester exams
9	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students	Sugar beet insects control Type and		Monthly and end semester exams
10	3	students with the skill of applying modern in iden◆y new infec◆ons	Oil crop insects		Monthly and end semester exams
11	3	students with the skill of applying modern in iden◆y new infec◆ons	Tobacco insects		Monthly and end semester exams
12	3	students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students learn about methods of	Safflower insects		Monthly and end semester exams

13	**3**	**students with the skill of applying modern in iden◆y new infec◆ons**	**Sun flower insects**		**Monthly and end semester exams**
14	**3**	**students with the skill of applying modern in iden◆y new infec◆ons Skil expansion students learn about methods of controlling insects and studying their life cycles Insects and the damage they cause to economic crops**	**Insects coton Mites that infect different crops Entomolog ical**		**Monthly and end semester exams**
15			**Exam2**		

1. Course Evaluation

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

2. Learning and Teaching Resources

Required textbooks (curricular books, if any)	No
Main references (sources)	**no**
Recommended books and references (scientific journals, reports...)	**References** **Iyad Youssef Hajj Ismail and Banan Rakan 90pp** **Field crop insects book-Economic insects :** **Muhammad abdel Wahab Abdel Fattah , Ramadan Abdel Qader Salama .Abdel Aziz Mahmoud Ibrahim**
Electronic References, Websites	No

1. Course Name:
theortical crop disease–
2. Course Code:
CRDE3011
3. Semester /
Second semester-third stage:2023- 2024
4. Description Preparation Date:2024
22-2-2024
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: Dr. Hasanan Taher Email:
8. Course Objectives

Course Objectives	**1-definition of crop disease,and what is its importance in agricultural crops** **2-Management of crops disease**

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 in Crops disease**		
2	**3**		**Wheat Haredi Disease**		
3	**3**		**Rice disease**		
4	**3**		**maize disease**		
5	**3**		**Sun flower ,seasame and soy bean disease**		
6	**3**		**Sugarcan disease**		

7			**Exam**		
8	**3**		**Cotton &linen disease**		
9	**3**		**Beans disease**		
10	**3**		**Alfaalfa disease**		
11	**3**		**Sorghum diseases**		
12	**3**		**Rust and Smuts**		
13	**3**		**Field peanut diseases**		
14	**3**		**Diseases of fibrous crops**		
15		**exam**	**Second month exam**		**display screen + a blackboard**

11. Course Evaluation

Distribution of the score out of 50 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)	Diseases of field crops, methodological (Dr. Raqeeb Akef Al-Ani, Dr. Maysar Majeed

	Jarjis),
Main references (sources)	diseases of field crops (Dr. Robert F. Neval)
Recommended supporting books and references (scientific journals, reports...)	Scientific journals
Electronic references, websites	Some research and articles on crops disease

Course Description Form

1. Course Name:	
Crop disease	
2. Course Code: 002730	
3. Semester /	
Second semester- third stage2023-2024	
4. Description Preparation Dat	
22-2-2024	
5. Available Attendance Forms:	
Presence- full time	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of study hours / 75 hours (2 theoretical hours + 3 practical hours per week) 3.5 unit week 52.5 Total Units	
7. Course administrator's name (mention all, if more than one name)	
Name:	
8. Course Objectives	
1- Identify diseases affecting field crops 2- Isolation and diagnosis of pathogens 3- Methods of combating diseases	
9. Teaching and Learning Strategies	
Strategy	1- Education strategy by PowerPoint presentation. 2- Brainstorming education strategy. 3- Education Strategy Field and Laboratory Observations Series

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	**3**		General guidelines to be provided in the plant pathology laboratory, the objective of studying plant pathology, how to diagnose the disease, the definition of the disease, the symptoms of the disease, the signs of the disease.	Explanatory lecture with samples of pathological symptoms of different plants	display screen + a blackboard
2	**3**		Wheat diseases / Rust and Smut	Explanatory lecture with samples of pathological symptoms of the wheat plant	display screen + a blackboard
3	**3**		Wheat diseases / Powdery Mildew, Wheat mosaic, Seed Gall.	Explanatory lecture with samples of pathological symptoms of plants	display screen + a blackboard
4	**3**	.	Barley disease / Ergot disease, Net Blotch, Stripe disease, Spot Blotch	Explanatory lecture with samples of pathological symptoms of different plants	display screen + a blackboard
5	**3**		First-month exam		
6	**3**		Rice Diseases / Blast Disease, Sclerotium stem rot, Kernel and panicle rot, Brown leaf Spot, Yellow Dwarf.	Explanatory lecture with samples of pathological symptoms of different plants	display screen + a blackboard
7			Sorghum diseases / Long Smut, Covered Smut, Loose Smut, Charcoal Rot.	Explanatory lecture with models of pathological symptoms	display screen + a blackboard
8	**3**		Yellow corn diseases / Head Smut, Common Smut, Deplodia Rot, Bacterial Wilt.	Explanatory lecture with models of pathological symptoms	display screen + a blackboard

9	**3**		Sunflower diseases / Downy Mildew Disease, Powdery Mildew Disease, Rust Disease, Sclerotina Rot. Sesame diseases / Charcoal Rot, Fusarium Wilt.	Explanatory lecture with models of pathological symptoms	display screen + a blackboard
10	**3**	Exam 2	Second month exam		
11	**3**		Practical lesson on methods of isolating pathogens and diagnosing them in the laboratory		
12	**3**	.	Soybean diseases / Downy Mildew, Charcoal Rot. Field pistachios diseases / Seed rot and seedling	Explanatory lecture with models of pathological symptoms	display screen + a blackboard
13	**3**		Cotton crop diseases / Angular leaf spot, Verticillium and Fusarium Wilt, Cotton nut rot.	Explanatory lecture with models of pathological symptoms	display screen + a blackboard
14	**3**	.	Sugar cane diseases / Red Rot, Smut Disease. Tobacco Diseases / Tobacco Mosaic disease	Explanatory lecture with models of pathological symptoms	display screen + a blackboard
15			Field visit to learn about crop diseases		

11. Course Evaluation

The distribution is as follows: 50 degrees / 30 degrees for theoretical and 20 degrees for practical for monthly and weekly exams for the semester.
50 marks / 30 points for theoretical and 20 points for practical end-of-course exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Field Crop Diseases Book (Dr. Raqeeb Akef Al-Ani and Maysar Majid Gerges, 1989)
Main references (sources)	Field Crop Diseases Book (Dr. Robert F. Neval 1991)
Recommended books and references (scientific journals, reports...)	Scientific journals

Electronic References, Websites	Some research and articles on genetics

Course Description Form

1. Course Name:	
Practical Land Reclamation	
2. Course Code:	
3. Semester / Year:	
First semester \ third stage2023-2024	
4. Description Preparation Date:	
22-2-2024	
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:	
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**		land reclamation(decision and requirements)	Lecture with explanatio	daily exam
2	**2**		Lands that need reclamation	Lecture with explanatio	daily exam
3	**2**		Reclamation of Saline Soils	Lecture with explanatio	daily exam
4	**2**		The problem of salinity and its impact on Agricultural production	Lecture with explanatio	daily exam
5	**2**		**Exam1**		
6	**2**		Classification of salt-affected soils Reclamation of sodic soils	Lecture with explanatio	daily exam
7	**2**		Reclamation of calcareous soils	Lecture with explanatio	daily exam
8	**2**		Reclamation of gypsiferous soils	Lecture with explanatio	daily exam
9	**2**		Reclamation of sandy and desert soils	Lecture with explanatio	daily exam
10	**2**		Reclamation of water logged soils	Lecture with explanatio	daily exam
11	**2**		Reclamation of Acid soils	Lecture with explanatio	daily exam

12	**2**		land reclamation(decision and requirements)		daily exam
14-13	**2**		Reclamation of Saline Soils Lands that need reclamation		daily exam
15			**Exam2**		

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

12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**1- 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).**

Course Description Form

1. Course Name:
Practical Land Reclamation
2. Course Code:
3. Semester / Year:
First semester \ Thrid stage
4. Description Preparation Date:

22-2-2024
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:
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**
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	Unit or Subject Name	Learning Method	Evaluation
1	**3**		**Conducting a culture experiment in anvils of saline soil washed with**	**Lecture with explanation presentation**	**daily exam**
2	**3**		**Conducting a culture experiment in anvils of saline soil washed with**	**Lecture with explanation presentation**	**daily exam**
3	**3**		**Reclamation of saline soils/implementation of the saline soil reclamation**	**Lecture with explanation presentation**	**daily exam**

4	**3**		**Implementing a saline soil reclamation program Specifications of water**	**Lecture with explanation presentation**	**daily exam**
5	**3**		**Exam1**		
6	**3**		**Irrigation channels**	**Lecture with explanation presentation**	**daily exam**
7	**3**		**Reclaimed land management**	**Lecture with explanation presentation**	**daily exam**
8	**3**		**Reclaimed land management**	**Lecture with explanation presentation**	**daily exam**
9	**3**		**Reclamation of sandy lands**	**Lecture with explanation presentation**	**daily exam**
10	**3**		**Reclamation of sandy lands**	**Lecture with explanation presentation**	**daily exam**
11	**3**		**Reclamation of flooded lands**	**Lecture with explanation presentation**	**daily exam**
12	**3**		**Reclamation of flooded lands**	**Lecture with explanation presentation**	**daily exam**
14-13	**3**		**Follow up practical experience Evaluate the practical experience and**	**Lecture with explanation presentation**	**daily exam**
15	**3**		**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- Shafiq Ibrahim Abdel-Al and Amin Hamad Al-Rawi. 1981. Soil reclamation and improvement. Ministry of Higher Education and Scientific Research. Sulaymaniyah
	Agri-fax-liming of acid soil ,Alberta Agriculture, Canada,Agdex534.1,June(1981).

Course Description Form

1. Course Name:
Cultivation of lands
2. Course Code:
3. Semester / Year:
First semester – fourth stage/ 2023- 2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:

Attendance in Crop Hall No. 2**- full time**
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)
8. Course Objectives

Course Objectives	• Identify the meaning of the marshes and their environmental importance • Identifying the areas where the marshes spread and their divisions • What are the risks of drying out the marshes? • Benefits of the marshes • Physical and chemical characteristics of the marshes • Sediments in the marshes and the
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**		Definition of marshes and water swamps - The environmental importance of the Iraqi	**. Lecture with explanation and**	**. Display screen + whiteboard**
2	**2**		Geography of the marshes - climate of the marshes - geography of some of	**. Lecture with explanation and**	**. Display screen + whiteboard**
3	**2**		Division of the central and southern marshes - division of the marshes according to	**. Lecture with explanation and**	**. Display screen + whiteboard**

4	**2**		Drying of the marshes and its impact on the different climatic characteristics of southern Iraq 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**
5			**Exam1**		
6	**2**		Benefits of the marshes - the geographical distribution of the	**. Lecture with explanation and**	**. Display screen + whiteboard**
7	**2**		Evaluation of the physical properties of marsh soils in southern Iraq -	**. Lecture with explanation and**	**. Display screen + whiteboard**
8	**2**		Some environmental and morphological studies of the marshes of southern Iraq -	**. Lecture with explanation and**	**. Display screen + whiteboard**
9	**2**		Sediments in the marshes - mineral deposits of floors and types of clay	**. Lecture with explanation and**	**. Display screen + whiteboard**
10	**2**		The effect of drying and burning on marsh soils. Physical and chemical properties of	**. Lecture with explanation and**	**. Display screen + whiteboard**
11	**2**		Marsh water quality - marsh water quality before drying - water quality in the	**. Lecture with explanation and**	**. Display screen + whiteboard**
12	**2**		Functional diversity - the relationship between environmental	**. Lecture with explanation and**	**. Display screen + whiteboard**

13	**2**		Life functions of marshes - primary productivity of aquatic plants - primary	**. Lecture with explanation and**	**. Display screen + whiteboard**

14	**2**		Food networks and chains in the marshes - ecological cycles of elements in wetlands Environmental restoration of the marshes - restoration of the marshes - a road map for the restoration of the marshes - glimpses of the Arab wetlands	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
15			**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.					
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: Plant Breeding
(Theoretical plant breeding) -

2. Course Code:
PLBR409
3. Semester / Year:
Second Semester –fourth stage(2023-2024)
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
Attending college within practical microbiology laboratories **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-5
7. Course Administrator's Name (Mention All, If More Than One Name)
8. Course Objectives

Course Objectives	• **Learn about plant breeding science and related sciences** • **Identify plant breeding methods and the objectives of pedagogy** • **Study of plant propagation methods and male infertility and its relationship to plant breeding** • **Study of genetic and environmental variations and their relationship to plant growth**

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 outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2		Definition of plant breeding science - a brief history - objectives of plant breeding science - the foundations that laid the foundations of plant breeding	Lecture with explanation in presentation	Display + Blackboard
2	2		Propagation methods in plants - Types of pollination in plants - Factors that encourage self-pollination - Humoral	Lecture with explanation in presentation	Display + Blackboard
3	2		Heterogeneities and their relationship to plant growth - types of differences - infertility and incompatibility - means of overcoming self-incompatibility	Lecture with explanation in presentation	Display + Blackboard

4	**2**		**Male infertility - its types - its applied benefits Genetic symmetry - its danger - chromosomal replication - its types - how it happens - its benefits**	**Lecture with explanation in presentation**	**Display + Blackboard**
5			**Exam1**		
6	**2**		**Plant breeding methods - duties of genetic material introduction departments - import steps - benefits**	**Lecture with explanation in presentation**	**Display + Blackboard**
7	**2**		**Acclimatization - types - selection - types - pure strain - benefits of pure strain selection**	**Lecture with explanation in presentation**	**Display + Blackboard**
8	**2**		**Comparison of autologous and mixed crops pollination – comparison of total selection and individual selection**	**Lecture with explanation in presentation**	**Display + Blackboard**
9	**2**		**Compare the steps of the parentage recording method and the steps of the aggregation method – and compare the differences between the two methods**	**Lecture with explanation in presentation**	**Display + Blackboard**

10	**2**		**Benefits of the method of re-pollination - hybrid - types of hybrids**	**Lecture with explanation in presentation**	**Display + Blackboard**
11	**2**		**Synthetic variety – its advantages**	**Lecture with explanation in presentation**	**Display + Blackboard**
12	**2**		**Breeding methods of vegetative propagation plants**	**Lecture with explanation in presentation**	**Display + Blackboard**
13	**2**		**Genetic mutations - types - methods of their events**	**Lecture with explanation in presentation**	**Display + Blackboard**
			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.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	**No**
Main References (Sources)	**1-Genetics and breeding of practical plants Dr. Hamid Globe Ali**

Recommended Books and References (Scientific Journals, Reports...)	**3- Plant breeding and improvement d. Medhat Al-Sahuki and others**
Electronic References, Websites	**no**

Course Description Form

1. Course Name :
- **Plant Breeding Practical**
2. Course Code:
3. Semester / Year:2023- 2024
Second semester-fourth stage
4. Description Preparation Date:2024

22-2-2024
5. Available Attendance Forms:
In presence
6. Number of Credit Hours (Total) / Number of Units (Total):
5 / 3.5
7. Course Administrator's Name
8. Course Objectives

Course Objectives	**Introducing the science of plant breeding and its importance -1** **Methods of plant breeding -2** **Difficulties facing plant breeders when implementing breeding programs -3** **4- Modern breeding methods used to improve plant characteristics**

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**		**Defining the science of plant breeding and improving it. Objectives of breeding science Conduct a field visit to learn about plant pollination**	**a lecture with an explanation, a presentation,**	**display screen + a blackboard**
2	**3**		**The floral system and its relationship to pedagogy and calculating the percentage of variation for a specific trait**	**a lecture with an explanation, a presentation,**	**display screen + a blackboard**

3	**3**		**Learn about the floral system of self-pollinating crops**	**a lecture with an explanation, a**	**display screen + a blackboard**
4	**3**		**Learn about the floral system of cross-pollinated crops**	**a lecture with an explanation, a**	**display screen + a blackboard**
5	**3**		**Implementing taxes on some self-pollinating crops**	**a lecture with an explanation, a**	**display screen + a blackboard**
6	**3**		**Conducting taxes on some cross-pollinated crops**	**a lecture with an explanation, a**	**display screen + a blackboard**
7			**First-month exam**		
8	**3**		**Field identification of vegetatively pollinated crops**	**a lecture with an explanation, a**	**display screen + a blackboard**
9	**3**		**Practical examples of hybrid vigor and indoor breeding in self-pollinated and**	**a lecture with an explanation, a**	**display screen + a blackboard**
10	**3**		**A field visit to learn about fodder and vegetatively reproductive**	**a lecture with an explanation, a**	**display screen + a blackboard**
11	**3**		**A field visit to identify and diagnose diseases and insects that**	**a lecture with an explanation, a**	**display screen + a blackboard**
12	**3**		**Inheritance accounts of all kinds**	**a lecture with an explanation, a**	**display screen + a blackboard**
13	**3**		**Identify the reasons for different heritability values**	**a lecture with an explanation, a**	**display screen + a blackboard**
14	**3**		**Calculate genetic attainment and hybrid strength**	**a lecture with an explanation, a**	**display screen + a blackboard**

15	**3**		**Second month exam**	**a lecture with an explanation, a**	**display screen + a blackboard**

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)	**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**

Course Description Form

1. Course Name: -	
Crop Management	
2. Course Code:	
3. Semester / Year:	
First semester – fourth stage / 2023-2024	
4. Description Preparation	
Date: 22-2-2024	
5. Available Attendance Forms:	
Mandatory full time	
6. Number of Credit Hours (Total) /	
30 hr.Number of Units (Total) 3.5-5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
8. Course Objectives	
Course Objectives	• Providing the student with practical and theoretical information on field management. • Teaching the student the basic sciences of field crops.
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.**
10. Course Structure	

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1		Crop Concept - Crop Management Concept		theoretical and practical power point	Daily and monthly tests
2		Pre-agriculture soil service - tillage concept benefits - Good tillage conditions - types of tillage - types of ploughs			
3		Softening - Benefits of softening - depth of softening - softening machines - leveling - benefits of leveling - conditions - leveling machines - field division			
4		Crop service - planting dates GDD units and their relationship to planting dates - Growing Degree Days(GDD) applications in crop management and production - soil heat and its relationship to crop growth			
5		**Assignment -1**			
6		Soil - soil conditions suitable for growing field crops - improve soil fertility			
7		Seeding rate- plant density - the role of plant density in intercepting light and increasing yield - calculation of plant density			

8		Planting methods - its importance in the growth of the crop - the appropriate depth of planting			
9		**Assignment 2**			
10		Soil conditioners - organic fertilizers - green manure - adding gypsum and sulfur to Reclamation of saline and alkaline soils			
11		Irrigation - the importance of water for plants - number of irrigations for crops - Water Consumption - water use efficiency			
12		Weed control - The most important pesticides used and recommended for control, Control of insects and diseases - diseases and insects that infect crops - how to prevent and control them before they appear			
13		**Assignment 3**			
14		Ripeness and harvest - physiological maturity - hard maturity - signs of maturity of crops		Assignment 3	
15		Grain Storage Management – Methods of grain storage – Types of silos - methods of drying the yield in the field and silos			
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)	**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-Plant nutrition guide. Youssef Muhammad Abu Dahi and Moayed Ahmed. Al-Younis. College of Agriculture - University of Baghdad, 1988 3-Production and improvement of field crops (Part One) Abdul Hamid Ahmed. Al- Younis, University of Baghdad - College of Agriculture 1993
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**no**

Course Description Form

1. Course Name: -
Crop Management
2. Course Code:
3. Semester / Year:
First semester-fourth stage/ 2023-2024
4. Description Preparation
Date: 22-2-2024
5. Available Attendance Forms:
Mandatory full time
6. Number of Credit Hours (Total) /
30 hr.Number of Units (Total) 3
7. Course Administrator's Name (Mention All, If More Than One Name)

8. Course Objectives	
Course Objectives	• Providing the student with practical and theoretical information on field management. • Teaching the student the basic sciences of field crops. • Teaching students to work in the future in ministries and institutions related to agricultural sciences.
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**
10. Course Structure	

Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
1			**Conduct plowing, observe its specifications, and control it after**	theoretical and practical power point lectures	Daily and monthly tests
2			**Dividing the field and leveling it for planting the**	theoretical and practical power point	Daily and monthly tests
3			**Planting one or more crops at the same time and plant density**	theoretical and practical power point lectures	Daily and monthly tests
4			**Planting a crop at several dates and recording data to know the effect of**	theoretical and practical power point lectures	Daily and monthly tests
5		**Exam 1**			
6			**Growing a crop with several doses of NPK to**	theoretical and practical	Daily and monthly tests
7			**Planting a crop after different irrigations (5**	theoretical and practical	Daily and monthly tests

8			**Cultivation of a crop using two treatments, one**	theoretical and practical	Daily and monthly tests
9			**A group of students recorded the**	theoretical and practical	Daily and monthly tests
10			**A group of students monitored signs**	power point lectures Discussions,	Daily and monthly tests
11			**A group of students completes the**	theoretical and practical	Daily and monthly tests
12			**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.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
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-Plant nutrition guide. Youssef Muhammad Abu Dahi and Moayed Ahmed. Al-Younis. College of Agriculture - University of Baghdad, 1988 3-Production and improvement of field crops (Part One) Abdul Hamid Ahmed. Al-Younis, University of Baghdad - College of Agriculture, 1993
Recommended Books and References (Scientific Journals, Reports...)	**No**
Electronic References, Websites	**No**

Course Description Form

1. Course Name:
Practical pasture management
2. Course Code:
3. Semester / Year:
The second semester-fourth stage / 2023-2024
4. Description Preparation Date:
22-2-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
(3 practical hours) 3 units
7. Course Administrator's Name (Mention All, If More Than One Name)
Name:
8. Course Objectives

Course Objectives	• **• Identify natural factors and learn about the most important natural pasture plants**

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**		**Natural factors affecting pastures - environmental factors and soil**	**Display Screen**	**Lecture with explanation and**
2	**3**		**Life factors, fire factors, and location factors**	**Display Screen**	**Lecture with explanation and**
3	**3**		**Components of plant cover in pasture lands**	**Display Screen**	**Lecture with explanation and**
4			**Exam1**		
5	**3**		**The effect of grazing on the productivity of pasture plants - the**	**Display Screen**	**Lecture with explanation and**
6	**3**		**The effect of grazing on the plant composition of the cover**	**Display Screen**	**Lecture with explanation and**
7	**3**		**The relationship of pasture plants to soil and water conservation**	**Display Screen**	**Lecture with explanation and**

8	**3**		**Restoring natural and artificial cladding to degraded pasture**	**Display Screen**	**Lecture with explanation and**
9	**3**		**Causes of pasture land deterioration and ways to improve pastures**	**Display Screen**	**Lecture with explanation and**
10	**3**		**Types of pastoral plants and trees growing in Iraqi pastures**	**Display Screen**	**Lecture with explanation and**
11	**3**		**Harmful and poisonous plants in pasture lands Bloating, its causes**	**Display Screen**	**Lecture with explanation and**
12	**3**		**Natural factors affecting pastures - environmental factors and soil**	**Display Screen**	**Lecture with explanation and**
13	**3**		**Life factors, fire factors, and location factors**	**Display Screen**	**Lecture with explanation and presentation**
14			**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.

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

Course Description Form

1. Course Name:	
Pasture management	
2. Course Code:	
3. Semester / Year:	
Second semester –fourth stage /2023- 2024	
4. Description Preparation	
Date: 22-2-2024	
5. Available Attendance Forms:	
Attendance in Crop Hall No. 2 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:	
8. Course Objectives	
Course Objectives	• **Identify the types of pastures** • **Identifying grazing areas globally and grazing areas in Iraq** • **The importance of pastures** • **Factors affecting pastures** • **Identify grazing systems** • **Identifying areas with harmful jungles**
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,**	Pastures and their types	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
2	**2**		The economic importance of pastures	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
3	**2**		Pastoral vegetation and its main components	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
4	**2**		Environmental factors and natural pastures	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
5	**2**		Plant and grazing areas of the world	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
6	**2**		First semester exam		
7	**2**		Plant and grazing areas in Iraq	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
8	**2**		Grazing and its effect	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
9	**2**		Types of grazing systems	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
10	**2**		The animal load and its determinant factors	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
11	**2**		Exploitation sources of grazing plants	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
12	**2**		Pasture management and maintenance	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**

13	**2**		weeds in natural pastures	**. Lecture with explanation and presentation**	**. Display screen + whiteboard**
14	**2**		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.	
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