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



# Academic Program and Course Description Guide

## **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:**

<u>Academic Program Description</u>: 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.

<u>Course Description</u>: 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.

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

**<u>Program Mission</u>**: 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.

<u>**Curriculum Structure:**</u> 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 extracurricular activities to achieve the learning outcomes of the program.

#### Academic Program Description Form

University Name: University of Anbar Faculty/Institute: College of Agriculture Scientific Department: Field Crops Academic or Professional Program Name: Agricultural concepts Final Certificate Name: BSc in Agricultural sciences Academic System: By Semester Description Preparation Date: 25 / 1 / 2024 File Completion Date: 14 / 4 / 2024

Signature: M

Head of Department Name: Assist.Prof.Dr. Abdullsamad Hashim Noaman Date: 14 / 4 / 2024

Signature:

Scientific Associate Name: Assist.Prof.Dr. Usama Hussein Mahedi Date: 14 / 4 / 2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Asst. Prof. Dr. Waleed Ismaal Kurdi

Date: 14/4/2024

Signature:

Approval of the Dean Prof. Dr. Idham Ali Abed Prof.Dr. Idham Ali Abed Khalaf Date: 14/4/2024 of the College of Agriculture



### 1. Program Vision

Preparing scientifically qualified cadres and opening up to society to transfer modern agricultural technologies and keep pace with global development in the agricultural sector.

#### 2. Program Mission

The main goal of the department's administration is to provide society with resources and staff working in various educational and pedagogical fields, as well as the industrial, banking, security, and economic sectors through:

1- Two agricultural engineer teachers graduated with high-level qualifications capable of modernizing the infrastructure in the field of agriculture.

2- Developing students, providing them with modern technologies, and providing services to the community and the labor market.

3- Building leadership qualities in graduates by training them to work as one team.

4- Support and provide a good work environment for students and faculty members.

5 - Caring for, supporting and encouraging outstanding students.

### 3. Program Objectives

1- Preparing graduates with high theoretical and practical skills to meet the needs of industry, technological development and community service in the field of agricultural engineering.

2- Providing the graduates with the applied practical skills and the necessary engineering background according to the scientific developments taking place in the methodological vocabulary and modern teaching methods to pursue postgraduate studies in the various specializations of agricultural engineering.

3- Preparing graduates to participate actively in building and rebuilding the country and achieving economic and social benefits for society.

#### 4. Program Accreditation

Study plans for all stages and for the coming years

### 5. Other external influences

Instructions and instructions related to the program

6. Program Struc	ture			
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	14	17	9.90%	Basic
College Requirements	21	67	39.06%	Basic
Department Requirements	27	87.50	51.02%	Basic
Summer Training	1			
Other				

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

### 7. Program Description

First	Year
<b>FIIS</b>	Ital

riist i cai				
Course Description	Couse Name	Course Code	Class Hours	Units
1st Semester \Core	Field Crops	AFC1911	2	3.5
1st Semester \Core	Organic chemistry	AFC1912	2	3.5
1st Semester \Core	Plant Science	AFC1913	2	3.5
1st Semester \Core	Plane surveying	AFC1914	2	3
1st Semester \Core	Mathematics	AFC1915	2	3
1st Semester \Core	Engineering Drawing	AFC1916	2	1.5
1st Semester \Core	Human Rights	AFC1917	2	3.5
2nd Semester \Core	Biochemistry	AFC1918	2	3.5
2nd Semester \Core	English Language	AFC1919	2	1
2nd Semester \Core	Principles of Field Crops	AFC19120	2	3.5
2nd Semester \Core	Principles of Soil	AFC19121	2	3.5
2nd Semester \Core	Principles of Animal Production	AFC19122	2	3.5
2nd Semester \Core	Computer Skills	AFC19123	-	3
		Total	24	39.5

### 2.11Second Year

<b>Course Description</b>	Couse Name	Course Code	Class Hours	Units
1st Semester \Core	Principles of Horticulture	AFC 1921	2	3.5
1st Semester \Core	Agricultural Mechanizations	AFC1922	2	3.5
1st Semester \Core	Agricultural guidance	AFC1923	2	2
1st Semester \Core	Principles of Food Industries	AFC1924	2	3.5
1st Semester \Core	Soil Fertility	AFC1925	2	3.5
1st Semester \Core	Plant classification	AFC1926	2	3.5
1st Semester \Core	Computer Skills	AFC1927	-	3.5
1st Semester \Core	Biology	AFC1928	2	3.5
2nd Semester \Core	Oil & Sugar Crops	AFC1929	2	3.5
2nd Semester \Core	Principles Of Statistics	AFC19220	2	3.5
2nd Semester \Core	Plant ecology	AFC19221	2	3.5
2nd Semester \Core	Irrigation and drainage	AFC19223	2	3.5
2nd Semester \Core	Freedom and democracy	AFC19224	2	1
2nd Semester \Core	Arabic Language	AFC19225	1	1
2nd Semester \Core	English Language	AFC1919	1	1
		Total	28	43.5

3.11Third Yea	ır			
<b>Course Description</b>	Couse Name	Course Code	Class Hours	Units
1st Semester \Core	Plant Genetics	AFC1931	2	3.5
1st Semester \Core	Design & Experiment analysis	AFC1932	2	3.5
1st Semester \Core	Mechanizations & Field crops Machinery	AFC1933	2	3.5
1st Semester \Core	Field crops Insect	AFC1934	2	3.5
1st Semester \Core	Salinity and reclamation	AFC1935	2	3.5
1st Semester \Core	Forage Crops	AFC1936	2	3.5
1st Semester \Core	Fiber Crops	AFC1937	2	3.5
2nd Semester \Core	Cereal Crops	AFC1938	2	3.5
2nd Semester \Core	Legume Crops	AFC1939	2	3.5
2nd Semester \Core	Field Crops diseases	AFC19310	2	3.5
2nd Semester \Core	Bee Breading	AFC19311	2	3.5
2nd Semester \Core	Computer Skills	AFC19312	2	3.5
2nd Semester \Core	Seed Technology	AFC19313	2	3.5
		Total	26	45.5

### 4.11 Fourth Year

Course Description	Couse Name	Course Code	Class Hours	Units
1st Semester \Core	<b>Medicinal Plants</b>	AFC1941	2	3.5
1st Semester \Core	Plant physiology	AFC1942	2	3.5
1st Semester \Core	Weed Biology	AFC1943	2	3.5
1st Semester \Core	Field Crops Management	AFC1944	2	3.5
1st Semester \Core	<b>Molecular Genetics</b>	AFC1946	2	3.5
1st Semester \Core	Landfarming	AFC1945	2	3.5
1st Semester \Core	<b>Project Graduation</b>	AFC1947	2	1.5
2nd Semester \Core	Plant Breeding	AFC1948	2	3.5
2nd Semester \Core	Growth Regulators	AFC1949	2	3.5
2nd Semester \Core	Weed Control	AFC19410	2	3.5
2nd Semester \Core	Seminars	AFC19411	2	3.5
2nd Semester \Core	Pasture Management	AFC19412	2	3.5
2nd Semester \Core	<b>Environmental Stress</b>	AFC19413	2	3.5
1st Semester \Core	Project Graduation	AFC19414	2	1.5

#### 8. Expected learning outcomes of the program

#### Knowledge:

-The student has the ability to know and understand the principles, theories, and fundamentals in agricultural engineering.

-The student has the ability to understand modern and advanced scientific topics in the field of agricultural engineering.

-The student should be able to understand mathematics and equations for major studies.

- Have a student able to solve engineering problems and design agricultural parts and the foundations of their theoretical applications.

- The student shall be able to understand the basics of the laboratory devices that are used in agricultural examination.

#### Skills :

- Description and analysis of agricultural applications.

-Analyze problems related to agricultural engineering and discussing the possible solutions

-Using computer programs for agricultural engineering to analyze these problems.

Ethics :

Preparing engineering designs for agricultural parts and systems.

□ Analyzing and discussing the results of engineering tests for use in design and evaluation processes.

□ The ability to write and draft engineering technical reports on the results of scientific

examinations and tests.

The ability to extract test results and their effects from the test.

9. Teaching and Learning Strategies :

1. Daily theoretical lectures.

2. Practical lectures in laboratories.

3. Graduation projects for final stage students and their discussion.

**10.Evaluation methods :** 

- Monthly and quarterly written exams.

- Rapid exams (Quizzes).

- Homework.

- Writing scientific reports.

9

Fooulty Month	A					
Academic Rank	Specializat	ion	Special Requireme (if applicat	ents/Skills ble)	Number o	of the teaching staf
	General	Special			Staff	Lecturer
Professor	field crops	Plant breeding crop production Plant environment	NO		3	NO
Assistant Professor	field crops	Plant breeding Plant Physiology Quality of crops Physiology of weed Seed technology Fiber technology			14	
Teacher	field crops	Plant breeding Plant Physiology Plant genetics Count my life			8	
assistant teacher	field crops	field crops			1	
Professional [	Developm	ent				
Mentoring new f	aculty mem	nbers				
Briefly describes institution and de	the process partment lev	used to mentor nev rel.	w, visiting,	full-time,	and part-t	ime faculty at the
Professional dev	/elopment o	of faculty members	S			
Briefly describe th such as teaching	ne academic and learnin	and professional c g strategies, assess	levelopmen sment of lea	nt plan and arning out	l arrangen comes, pro	nents for faculty ofessional

### **12.Acceptance** Criterion

Approving admission conditions for students in accordance with the regulations of the Ministry of Higher Education and Scientific Research (central admission)

- To pass the department's personal interview.
- Must be fit for medical examination.
- High school average.
- The college's absorptive capacity.

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

Market needs.

- Local trends of the governorate.
- Studies and questionnaires

#### **14.Program Development Plan**

Developing the program through evaluation results through which the highest levels of educational success and student outcomes are achieved



Please put	() in the box	es corresp	l ondii	<b>Progr</b>	r <b>am S</b> the in	Skills Idivid	Out	line earnii	1g ou	tcom	es of t	the ev	valuat	ted pro	ogram	1		
Year \	Course					l	Requi	ired l	earni	ng ou	tcom	es of	the p	rogran	n			
Couse mane	Course code	Core or elective	Kn ur	iowle iders	dge a tandi	nd ng	Su	bject- sk	spec	ific	1	'hink	ing sł	cill	(Or tran (Or emp d	Gener Isfera r) Oth relat oloyal pers evelo	al and ble sl er sk ed to bility onal pmer	l kills ills and nt
1 <sup>st</sup> Y	'ear		A1	A2	A3	A4	B1	B2	<b>B3</b>	<b>B4</b>	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>	D2	D2	D3	D4
Field Crops	AFC1911	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Organic chemistry	AFC1912	Core																$\checkmark$
Plant Science	AFC1913	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$

Plane surveying	AFC1914	Core				$\checkmark$			$\checkmark$	$\checkmark$							$\checkmark$	
Mathematics	AFC1915	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$				$\checkmark$	$\checkmark$
Engineering Drawing	AFC1916	Core	$\checkmark$		$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$								
Human Rights	AFC1917	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$	
Biochemistry	AFC1918	Core		$\checkmark$		$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$
English Language	AFC1919	Core		$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$
Principles of Field Crops	AFC19120	Core		$\checkmark$														
Principles of Soil	AFC19121	Core		$\checkmark$														
Principles of Animal Production	AFC19122	Core		V	$\checkmark$													
Computer Skills	AFC19123	Core		$\checkmark$		$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$
2nd Y	Year		A1	A2	A3	A4	B1	B2	<b>B3</b>	<b>B4</b>	<b>C1</b>	C2	С3	<b>C4</b>	D2	D2	D3	D4
Principles of Horticulture	AFC 1921	Core			$\checkmark$					$\checkmark$				$\checkmark$	V	$\checkmark$	$\checkmark$	V

Agricultural Mechanizations	AFC1922	Core				$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$
Agricultural guidance	AFC1923	Core	$\checkmark$		$\checkmark$													
Principles of Food Industries	AFC1924	Core	$\checkmark$															
Soil Fertility	AFC1925	Core				$\checkmark$						$\checkmark$	$\checkmark$					$\checkmark$
Plant classification	AFC1926	Core				$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$
Computer Skills	AFC1927	Core	$\checkmark$															
Biology	AFC1928	Core	$\checkmark$															
Oil & Sugar Crops	AFC1929	Core	$\checkmark$															
Principles Of Statistics	AFC19220	Core	$\checkmark$															
Plant ecology	AFC19221	Core	$\checkmark$		$\checkmark$		$\checkmark$	V	$\checkmark$									
Irrigation and drainage	AFC19223	Core		$\checkmark$								$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$		

Freedom and democracy	AFC19224	Core				$\checkmark$												
Arabic Language	AFC19225	Core	$\checkmark$															
English Language	AFC1919	Core	$\checkmark$															
3rd Y	'ear		A1	A2	A3	A4	B1	B2	<b>B</b> 3	<b>B4</b>	<b>C1</b>	<b>C2</b>	<b>C</b> 3	<b>C4</b>	D2	D2	D3	D4
Plant Genetics	AFC1931	Core	$\checkmark$															
Design & Experiment analysis	AFC1932	Core	$\checkmark$															
Mechanizations & Field crops Machinery	AFC1933	Core	$\checkmark$		$\checkmark$	$\checkmark$												
Field crops Insect	AFC1934	Core	$\checkmark$		$\checkmark$	$\checkmark$												
Salinity and reclamation	AFC1935	Core	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Forage Crops	AFC1936	Core	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Fiber Crops	AFC1937	Core			$\checkmark$					$\checkmark$					$\checkmark$		$\checkmark$	

Cereal Crops	AFC1938	Core			$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$					$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Legume Crops	AFC1939	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Field Crops diseases	AFC19310	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Bee Breading	AFC19311	Core	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Computer Skills	AFC19312	Core		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	AFC10313	0																
Seed Technology	AFC17515	Core	•	•			,				·		·					•
Seed Technology 4 <sup>th</sup> Y	/ear	Core	A1	A2	A3	A4	B1	B2	<b>B</b> 3	B4	<b>C1</b>	C2	<b>C</b> 3	<b>C4</b>	D2	D2	D3	D4
Seed Technology 4 <sup>th</sup> Y Medicinal Plants	Year AFC1941	Core	, A1 √	A2 √	<b>A3</b> √	<b>A4</b> √	<b>B1</b> √	<b>B2</b> √	<b>B3</b> √		C1 √	<b>C2</b> √	C3 √	<b>C4</b> √	<b>D2</b> √	<b>D2</b> √	<b>D3</b> √	<b>D4</b> √
Seed Technology 4 <sup>th</sup> Y Medicinal Plants Plant physiology	AFC19313 Zear AFC1941 AFC1942	Core Core Core	→ A1 √ √	<b>A2</b> √ √	<b>A3</b> √ √	<b>A4</b> √	<b>B1</b> √	<b>B2</b> √	<b>B3</b> √	<b>B4</b> √	<b>C1</b> √ √	<b>C2</b> √ √	C3 √ √	<b>C4</b> √ √	<b>D2</b> √	<b>D2</b> √	<b>D3</b> √	<b>D4</b> √
Seed Technology 4 <sup>th</sup> Y Medicinal Plants Plant physiology Weed Biology	AFC19313 Year AFC1941 AFC1942 AFC1943	Core Core Core Core	→ A1 √ √ √ √	A2 √ √ √	A3 √ √	A4 √ √	<b>B1</b> √ √	B2 √ √	<b>B3</b> √ √	<b>B4</b> √ √	C1       √       √       √	C2 √ √ √	C3 √ √ √	C4 √ √ √ √	<b>D2</b> √ √	<b>D2</b> √ √	<b>D3</b> √ √	→ <b>D4</b> √ √

<b>Molecular Genetics</b>	AFC1946	Core			$\checkmark$						$\checkmark$		$\checkmark$	$\checkmark$				$\checkmark$
Landfarming	AFC1945	Core	$\checkmark$	$\checkmark$		$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$								
Project Graduation	AFC1947	Core	$\checkmark$															
Plant Breeding	AFC1948	Core	$\checkmark$	$\checkmark$		$\checkmark$												
Growth Regulators	AFC1949	Core	$\checkmark$	$\checkmark$		$\checkmark$					$\checkmark$		$\checkmark$	$\checkmark$				$\checkmark$
Weed Control	AFC19410	Core	$\checkmark$	$\checkmark$		$\checkmark$			$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$				$\checkmark$
Seminars	AFC19411	Core	$\checkmark$	$\checkmark$		$\checkmark$							$\checkmark$	$\checkmark$				$\checkmark$
Pasture Management	AFC19412	Core	$\checkmark$	$\checkmark$									$\checkmark$	$\checkmark$				$\checkmark$
Environmental Stress	AFC19413	Core	$\checkmark$	$\checkmark$									$\checkmark$	$\checkmark$				$\checkmark$
<b>Project Graduation</b>	AFC19414	Core	$\checkmark$															
		Core	$\checkmark$							V								

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

1.	Course Name:				
Enviro	nmental stress				
2.	Course Code:				
AFC19	412				
3.	Semester / Yea	r:			
Semest	ers (Second Se	emester) 2023-2024			
4.	Description Pre	eparation Date:			
25-1-20	24	1 5			
5.	Available Attei	ndance Forms:			
6	Weekly Number of Cro	dit Hours (Total) / N	umber of Units (Total)		
75 hour	rs (Theoretical 3	$\frac{11110018(100a)}{10}$	1 45 hours)/ 3Units		
75 11001	$\frac{S(\text{Incolution})}{Course administ$	strator's name (monti	on all if more then one name	)	
1.	Name: Waleed	Abdulsattar Taba El	-Fahdawi	)	
	Email.ag walee	Abdulsattar Tana Er			
	Linuinug. Wulet				
8.	Course Objecti	ves			
A- Exp	and the student	's theoretical and prac	ctical perceptions.		
B- Lear	n about moder	n technologies related	to environmental stress.		
C-Ident	ify the biotic a	nd abiotic factors rela	ated to environmental stress.		
D-Ident	ify the types of	of stress and the repr	resentative and metabolic pro	ocesses of th	ne plant under str
conditio	ons.	1	Ĩ		1
9.	Teaching and I	earning Strategies			
1- The	method of givir	ng lectures regarding	the theoretical framework of	the subject.	
2- Meth	od of explanation	ion, interpretation and	d linking.		
3- Expl	anation method	l using electronic den	nonstration aids (Data show).		
4-Using	g the regular b	lackboard and pen	to explain and explain some	e of the thi	ngs that need to
clarified	d to the student	-			C
10. Co	ourse Structure				
Week	Hours	Required	Unit or subject name	Learnin	Evaluation
		Learning		g	method
		Outcomes	<b>T</b> . <b>1</b>	method	D 11 1
1	(2theoretical	Environment Stress	Introduction to	Lecturin	Daily and
	+3		environmental stress	g (theoreti	montniy test +
	practical)5			(illeoleii cal and	activities
				practical)	reports and
				practical)	attendance
2			Stress of abiotic factors		
			(climate and non-climate)		
			(temperature, humidity		
			and rain).		
3			Stress of abiotic factors		
			(light, invisibleradiation		
			and Photoperiodism).		
4			water stress		
5			water stress		

6			V	Vater stress and		
			p	hysiological processes in		
			tł	ne plant		
7			S	alt stress		The first
						month exam
8			C	Crops tolerate to salinity		
9			Ľ	Data on crop tolerance to		
			S	alinity and methods used		
			to	o increase tolerance.		
10			R	Representative and		
			n	netabolic processes of the		
			p	lant under stress		
			C	onditions.		
				Dx1dative stress		
12				tress of metallic elements		
13				ligh heat stress		
14				low heat stress		
15			P	ollution stress		The second
11.0						month exam
$\Pi$	burse Evaluation	n		- (- (h- ()		ut an de la de llas
Distribu	ting the score	out of 100 a	ccording	g to the tasks assigned to	o the stude	nt such as daily
prepara	tion, dailyoral, i	monunly, or write	itten exa	ams, reports etc		
12. Le	ating and Tea	ching Resource	if only	1 The water tension in	mlanta D	" Daggom Taha
				Yassin. Faculty of Scie 1992. 2-Scientific foundations and improving field of Education and Scientific Dr. Iyad Hussein Ali Al- Awaid Ghadeer Al-Obai 3- Inheritance and b environmental stress ( environmental pollution Library. For printing, p Alexandria. The Egyptia Odeh Awad. 2009.	nce - Univ for mana crops. Mini- Research Maeeni and di. 2018. reeding of drought, hi ). part One publishing a an Arabic F	ersity of Mosul. ging, producing istry of Higher - Iraq. Pp. 1067. Dr. Muhammad crops due to gh temperature, e. The Egyptian and distribution. Republic. Hassan
Recommended books and references (scientific journals, reports)			<ul> <li>environmental stresses and scarce resources (low input) and its physiological foundations. 2005. Dr. Mr. Hamid Al-Saidi. Faculty of Agriculture - Tanta University - Egypt. On p. 331.</li> <li>2-Fundamentals of plant physiology. Dr. Bassam Taha Yassin, 2001.</li> <li>1-Arabic and English scientific magazines</li> <li>2-Ashraf, M., M. Ozturk, H.R. Athar. 2009. Salinity and Water Stress. Improving Crop Efficiency. Dr.</li> </ul>			
Electro	nic References,	Websites		244 Lectures from the	Internet.	p.
	,			1		

1. Course Na	me:			
Field crops man	agement.			
2. Course Co	de:			
AFC1944				
3. Semester	/ Year:			
Spring 2023-20	024.			
4. Descriptio	n Preparation Date:			
25-1-2024				
5. Available A	Attendance Forms:			
Weekly				
6. Number of	Credit Hours (10tal) / Number of Units (10tal)			
7. Course ac	ministrator's name (mention all, if more than one name)			
Name:Dr. I	Muaiad Hadi + Dr. Omer Ismail .			
Email: <u>ag.r</u>	noaead.hadei@uoanbar.edu.ig			
8. Course Ob	jectives			
Course Objectives	<ul> <li>1-Determining the human role in providing food and population increase and the consequences of increasing the food gap, and productivity factors.</li> <li>2-Research on the management of crops scattered in Iraq and the world and the benefit from them and the adaptation of crops in their broad and narrow sense.</li> <li>3 -Knowledge of the management of the field crops before and after planting and the various agricultural processes accompanying them.</li> <li>4-Shed light on the types of irrigation canals and irrigation methods and reduce irrigation losses.</li> <li>5-Calculation of plant density and seed quantities according to the crop, the role of plant density in intercepting light and increasing.</li> <li>6-Clarifying the role of the main, secondary and rare fertilizers in growth, increasing the yield and symptoms of deficiency of elements on the plant, the relationship of the types of elements to metabolic processes.</li> <li>7-Paying attention to adding soil conditioners - using hemp and green manure and adding gypsum and agricultural sulfur to repair saline and saline-alkaline soi</li> </ul>			
9. Teaching and Learning Strategies				

Strategy		<ul> <li>1-Providing students with the basics and additional topics related to previous learning outcomes of skills, to solve scientific problems.</li> <li>2- Asking the students, during the practical laboratories and the field field side, to arrive at conducting many plant tests such as methods of planting, slipping, grafting, hoeing, soil division and waving.</li> <li>3- Conducting a set of plant and soil tests such as plowing, smoothing, leveling, fertilization methods, irrigation methods, and by the academic staff.</li> <li>4- Students' participation in the actual examinations.</li> </ul>				
10. Co	ourse	Structure				
week	Hou	Required Learning	Unit or	Learning method	Evaluation	
	rs	Outcomes	subject		metnod	
			name			
1	5	Man and food: food production, population increase, food gap, productivity factors.	Fieldcrops management	Conducting the plowing, watching its specifications and judging it after identifying its defects in terms soil moisture, the size of the soil masses and the distance between the plowing lines.	Conducting c and monthly through quest about the subject determine the comprehension	
2	5	Land service: Plowing, its importa depth, and its relationship to the growth of different crops, and its role in eliminating jungles, preparing elements, and increasing water conservation in the Smoothing: The depth of smoothing the machines used for the growth of the crop.	Fieldcrops management	Divide the field and settle for planti the following week. Students can divided into several groups, each group working together to grow a particular crop.	=	
3	5	Dividing the field: leveling the l and its relationship to dividing field and the area of planting boar	field crops management	Cultivation of one or more crops at same date and plant density using methods of prose, stripes, and not recording observations of growth occurrence in subsequent weeks, collecting and categorizing data according to each studied trait of field characteristics of the plant.	=	
4	5	Irrigation Channels: Irriga systems, nature of irrigation stre and irrigation losses from w according to the method used and method appropriate to the natur the land and the crop.	field crops management	Planting a crop on several dates and recording the data to know the eff of the dates.	-	
5	5	.Crop service: planting dates and their impact on calculating the thermal units needed for crop growth, light energy and its relationship to planting date, temperature. The difference in the effect of planting dates for winter summer crops on changing the date of harvest and the amount of harvest.	field crops management	Cultivating a crop with several plant densities and recording the data to know the effect of the densities.	=	

6	5	Plant density and seed quantities according to the crop, the role of plant density in intercepting light a increasing yield, optimal densities main crops, optimal planting distances for crops planted in lines, a how to calculate plant densities an their relationship to the leaf area guide.	field crops managemen	Cultivation of a crop with several doses of nitrogen and recording of to know the effect of nitrogen Dose.	=
7	5	Fertilization - the role of main, secondary and rare fertilizers in growth, yield increase a symptoms of element deficiency on the plant, the relationship of th types of elements to the metabolic processes in the plant and synthesis of various plant compounds, naming some elements for the plant, and the optimal quantities for the use of elements.	field crops managemen	Cultivation of a crop with severa doses of (NPK) to compare it wi nitrogen fertilization only.	
8	5	Seeds - seed quality, seed quantities plant densities and their calculations.	field crops managemen	Cultivate a crop and irrigate it wir several different irrigations (5 and 10 days), or every week or two, and record data on growt to know the role of water in this and record the signs of water deficit.	=
9	5	Soil improvers - the use of animal and green manure and the a ddition of gypsum and agricultura sulfur to repair saline and alkaline saline soils and its relationship to the electrical conductivity and pH of the soil solution and the readines the elements for the plant, and the equations for estimating th quantities of gypsum and sulfur according to the specifications of soil analysis.	field crops managemen	Cultivation of two crops with two factors, one of which is the bus removed manually and the othe without removal (although a pesticide can be used for comparison and note-taking).	=
10	5	Bush control - the most important common bush herbicide in major crops. Fine bush herbicides. Broadleaf herbicides. Pesticides recommended in Iraq to control weed plants of major crops. weed election.	field crops managemen	Extracting leguminous plants to study bacterial complexity, node size and rhizobia activity.	=
11	5	Irrigation of crops - the role of water in the dissolution of elements, absorption and plant growth. The number of irrigations for the crop a the determination of the depth of irrigation and how to calculate it. Water rations for major crops.	field crops managemen	Each group of students writes down the percentage of insects and diseases and attempts to diagnose them for each planted crop.	=

	1						
		Calculating the amount of water needed for the field on the farm.					
12	5	Methods and depth of cultivation scattered cultivation in merows a terraces and cultivation in lines and importance to the type of crop. T relationship of the nature of roo growth in each method and its reflection on the growth of the crop.	n field crops r managemen d	Study of sections of root, stem, flowers, ovaries, pollen grains a embryo sac.	=		
13	5	Crop adaptation - temperature, light, quality, intensity and duration, humidity, air	field crops managemen	Each group of students follows th signs of maturity on the crop ar conducts some moisture tests o the seeds and their suitability for harvest	=		
14	5	Control of diseases and insects - the main insect diseases that affect field crops and how to prevent them before their emergence and control them when they appear and the recommended pesticides in Irac	field crops managemen	Choosing a research topic about managing a specific crop for each student and writing it according to the teacher's directic	=		
15	5	Plant organs and their functions plant cell and its organelles, roo stem, leaves, leaf area. Maturity a harvest - how to harvest and the appropriate time for the crop, an estimate the losses from the crop. Storage of the yield - types stores and storage, storages of seeds and grains and their specifications and storage conditions in them such temperature, humidity and pesticides, methods of drying th yield in the field and in the store, titration of moisture in the seed before and at storage	field crops t management t	Each student presents his report t the students, discusses it and gives it a grade.	=		
11. Distrik	11. Course Evaluation Distributing the score out of 100 according to the tasks assigned to the student such as daily						
prepar	preparation, daily oral, monthly, or written exams, reports etc						
12. Require	Leam	1-The scientific basis f	es for the manager	nent, production and improveme	nt of field crops.		
RequiredIt is scientific basis for the management, production and improvement of held cropsTextbooksDr. Iyad Hussein Al-Muaini and Prof. Muhammad Awaid Ghadeer Al-Obaidi.(curricular books,College of Agriculture - University of Anbar, 2018.if any)2- Introduction to plant physiology. Dr Mrs. Omar Al-Huwairis and Dr. TayebHaj Ali Ahmed. Khartoum . Khartoum University Publishing House, 2010.3- A strategy for managing and irrigating field crops. NS. Dr Nemat Abdel AzizNoureddine and I. Dr Mohamed Fawzy Hamed and d. Hani Saber Saudi.Academic Library. Cairo . Arab Republic of Egypt, 2013.4- Plant nutrition guide. Dr Youssef Muhammad Abu Dahi and d. Supporter AhmedYounis. College of Agriculture - University of Baghdad, 1988.5- Reclamation and improvement of desert lands. Dr Maher Georgy Naseem.							

	<ul> <li>Faculty of Agriculture - Saba Pasha - Alexandria University (first edition). 2006.</li> <li>6- Production and improvement of field crops (part one). Abdul Hamid Ahmed Al-Younes, University of Baghdad - College of Agriculture, 1993.</li> <li>7- Grain production. Mr. Dr. Abdel Hamid Mohamed Hassanein, Faculty of Agriculture - Azhar University, Arab Republic of Egypt 2019.</li> <li>9 - Principles of field crop production. Dr Muhammad Hazal Kazem Al-Baldawi and d. Aladdin Abdul Majeed Al-Jubouri and d. Conciliator Abdul Razzaq Suhail Al-Na College of Agriculture - University of Baghdad, 2014.</li> <li>10- Lectures on crop management. so. Medhat Majeed Al-Sahoki, College of Agriculture - University of Baghdad, 2012.</li> </ul>
Main references (source	
Recommended books	
and references	
(scientific journals,	
reports)	
Electronic References,	11 - Lectures and statistics from the cluster network.
Websites	

1. Cours	e Name:
Pastures m	anagement
2. Cours	e Code:
AFC19411	
3. Semes	ster / Year: second
2023_2024	
4. Descri	iption Preparation Date:
25-1-2024	
5. Availa	ble Attendance Forms: in person
Week	ly
6. Numb	er of Credit Hours (Total) / Number of Units (Total)
30 Th	eoretical Hours + 45 Practical Hours
3 unit	S
7. Cours	e administrator's name (mention all, if more than one name)
Name	: Dr. yas amen mohammed
Email	: ag.yass.ameen@uoanbar.edu.iq
8. Course	e Objectives
A - Studyi developmer how to deve B- Expandir	ng the scientific aspects related to the exploitation and nt of natural pastures in general and in Iraq in particular and elop it. ng the student's theoretical and practical understandings.
9. Teach	ing and Learning Strategies
Strategy	<ul> <li>Increasing students' awareness of modern trends in managing and protecting pastures.</li> <li>Using Power Point presentation methods to convey information well and clearly to the student And Urging students to take advantage of Google search engines while asking them to submit scientific reports on the topics given to them in the academic subject.</li> <li>Semester and final exams are considered a reflection of the student's commitment and cognitive and skill achievement.</li> </ul>
10. Course	Structure

	1			1	
Week	Hours	Subject Name	Required learning outcomes	Teaching Methods	Evaluation Methods
1	5	Pastures management	The importance of natural pastures		
2	5	Pastures management	Types of natural pastures		
3	5	Pastures management	Factors affecting pastures		
4	5	Pastures management	Pastures, soil and water conservation		
5	5	Pastures management	Effects of plant vegetation - desertification		
6	5	Pastures management	Grazing arrangement		
7	5	Pastures management	The effect of grazing on plant reproduction and plant composition		
8	5	Pastures management	Grazing systems		
9	5	Pastures management	Proper exploitation of natural pastures		
10	5	Pastures management	The condition of the pasture and its ruling		
11	5	Pastures management	Classification of pasture conditions		
12	5	Pastures management	Grazing in the Mesopotamian plain		
13	5	Pastures management	Grazing in the Iraqi desert		
14	5	Pastures management	Harmful and poisonous plants in pasture lands		
15	5	Pastures management	Poisoning and bloating in pasture animals		

#### 11. Course Evaluation

Daily and monthly tests through questions on the subject of the study subject.

• Grades on the student's participation in research and scientific reports.

• Student activities through the possibility of applying some rules and homework at home during the school season regarding the academic subject.

#### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Natural Pasture Management - Written by Dr. Ramadan Al-Takriti and Mr. Abbas Mahdi Al-Hassan - 1981 - University of Mosul.

Main references (sources)	Fodder crops and pastures (Part One) - written by Dr. Muhammad Al-Sayyid Radwan and Dr. Abdullah Qasim Al-Fakhri - 1975 - University of Mosul.
Recommended books and references	
(scientific journals, reports)	
Electronic References, Websites	Scientific articles from the Internet and scientific journals specialized in this course

1. Course Name							
weed control methods							
AFC19	2. Course Code:						
3. Sen	nester	· / Ye	ear: Seasor	nal / 2 <sup>nd</sup> attempt			
2023-	2024	/ - ·					
4 Des	crinti	on P	Prenaration	n Date:			
4. Description Preparation Date: $25-1-2024$							
5 Ava	ailable	Atte	endance Fo	rms·			
<u> </u>	Weekl	y					
6. Nur	nber o	of Cr	edit Hours	(45) Number of U	Units (3)		
	5 unit	s (2	theoretical	+3 practical).			
7. Cou	urse a	idmi	nistrator's	name (mention all, if	more than one	name)	
	Name	: Ahr	med A. Alm	narie			
	Email:	ag.a	hmed.abdalwa	ahed@uoanbar.edu.iq			
8. Cou	8. Course Objectives						
Course	<b>Course Objectives</b> Students acquire scientific knowledge in categorizing and						
diagnosing weeds and knowing their damages.							
Students benefit by identifying the types of							
weed, their damages, and how to control them.							
9. Teaching and Learning Strategies							
Strategy	Strategy 1. lecture.						
		2	. Explanat	tion and clarification.			
		3	. Use of el	ectronic means of clari	fication (Data s	how).	
4. practical lessons in agricultural fields							
10. Course Structure							
Week	Hours	s R	equired	Unit or subject name	Learning	Evaluation	
		L	earning		method	method	
		0	utcomes				
1	5	5	Oral	Introduction in weeds	Oral & power point	Weekly &	
2	5	5	Oral	Weeds is it friend or	Oral & power point	Weekly &	
2		;	Oral	enemy Weed Classification		Weekly &	
3		י -	Oral	Wood Diapareal Matheda	Ural & power point	monthly Exam	
4		)	Oral	weed Dispersal Methods	Oral & power point	monthly Exam	

5	5	Oral	Weed Losses		Oral & power point	Weekly & monthly Exam	
6	5	Oral	Allelopathy		Oral & power point	Weekly & monthly Exam	
7	5	Oral	Weed Control Methods		Oral & power point	Weekly &	
8	5	Oral	Chemical Weed Control		Oral & power point	Weekly &	
9	5	Oral	Weed Compe	etition	Oral & power point	Weekly &	
10	5	Oral	Herbicides Translocation		Oral & power point	monthly Exam Weekly &	
10	5	Oral	Modern meth	ods in		monthly Exam Weekly &	
11	5		Weed control		Oral & power point	monthly Exam	
12	5	Oral	Herbicides R	esidues	Oral & power point	Weekly & monthly Exam	
13	5	Oral	Classification of Herbicides Groups		Oral & power point	Weekly & monthly Exam	
14	5	Oral	Improving Herbicides Ef	fficacy	Oral & power point	Weekly & monthly Exam	
15	5	Oral	The Latest Re in Weed Cor	esearches ntrol	Oral & power point	Weekly & monthly Exam	
11. (	11. Course Evaluation						
daily o	ral, mont	thly, and writte	en exams, repo	orts etc			
12. L	earning	and Teachir	ng Resources	6			
Required textbooks (curricular books, if any)				<ul> <li>1- Korres, N. E., Burgos, N. R., &amp; Duke, S. O. (Eds.). (2018). Weed control: sustainability, hazards, and risks in cropping systems worldwide. CRC Press.</li> <li>2- Gressel, Jonathan. Molecular biology of weed control. Vol. 1. CRC Press. 2002</li> </ul>			
Main references (sources)				Weed Control Methods. Ghanem Saadallah Hassawi and d. Baqer Abdul Khalaf Al-Jubo Ministry of Higher Education and Higher Educat - University of Baghdad. 1982.			
Recommended books and references (scientific journals, reports)				<ul> <li>Control Weed. Dr. Baqer Abdullah Khalaf Al- Jubouri and d. Ghanem Saadallah Hassawi and Faeq Tawfiq Chalabi. Ministry of Higher Education and Higher Education - University of Baghdad. 1985.</li> <li>Weeds and Principles of control Methods. Dr. Salem Hammadi Antar Al-Obaidi. Ministry of Higher Education, Education Sciences a. 2009</li> </ul>			
Electronic References, Websites				<u>www.weed</u> science.com			

1- Course Name:					
2- Course Code:					
AFC1937					
3- Semester / Yea	r:				
2023_2024					
4- Description Pre	eparation Date: spring				
25-1-2024					
5- Available Atten	dance Forms: Direct				
Weekly					
6- Number of Cred	it Hours (Total) / Number of Units (Total): 75 / 5				
75 hours (Theoretical 30 h	ours and practical 45 hours)/ 3Units				
7- Course admini	strator's name (mention all, if more than one name)				
Name: Assist Pi	rof. Abdullsamad Hashim Noaman				
Email: <u>ag.abdul</u>	Isamad.nasnim@uoanbar.edu.iq				
8- Course Objectiv	es				
Course Objectives	<ul> <li>The student will be acquainted with the scientific bases in Fiber Crops, both theoretical and practical.</li> <li>Expand the student's theoretical and practica knowledge.</li> <li>Getting acquainted with the modern techniques related to Fiber Crops.</li> <li>Identifying biotic and abiotic factors related to Fiber Crops.</li> </ul>				
9- Teaching and L	earning Strategies				
Strategy	<ol> <li>Providing students with theoretical and practical scientific knowledge on the subject of Fiber Crops of all kinds.</li> <li>Students benefit from practical experiences in the subject Fiber Crops and its relationship to various growth factors and the conditions surrounding the plant.</li> </ol>				

10- Course Structure							
Week	Hours	Required	Unit or subject	Learning	Evaluation		
		Learning	name	method	method		
		Outcomes					
1	5(2theory+ practical)	Fiber Crops	Fiber Crops	Giving lectures (theoretical and practical) (e- learning)	Daily and monthly test + scores on activities, reports and attendance		
2	5	Fiber Crops	Fiber Production				
3	5	Fiber Crops	Fiber Classification				
4	5	Fiber Crops	Cotton				
5	5	Fiber Crops	Cotton Cultivars				
6	5	Fiber Crops	Cotton Flowering				
7	5	Fiber Crops	Cotton Bolls &Seeds		first month exam		
8	5	Fiber Crops	Cotton Fiber or Lint				
9	5	Fiber Crops	Cotton Ecology				
10	5	Fiber Crops	Plant Density of Cotton				
11	5	Fiber Crops	Management of Cottor				
12	5	Fiber Crops	Picking of Cotton				
13	5	Fiber Crops	Flax				
14	5	Fiber Crops	Fertilization, Harvest : Retting of Flax				
15	5	Fiber Crops	Natural Properties Flax		second month exam		

#### 11- Course Evaluation

1-Weekly exams (quiz) and quarterly and final exams (theoretical and practical).

2- Interaction within the lecture.

3- Attendance.

4- Commitment and discipline in the classroom and laboratory.

5- Preparing scientific reports and presenting them with scientific explanations.

#### 12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fiber Crops		
	Field crop production		
Main references (sources)	Oil Crops		
Recommended books and references (scientific journals, reports)	Egyption cotton production and processing technology		
Electronic References, Websites			

13.	Course N	lame					
Plant ecology							
14.	Course Code:						
AFC1	9221						
15.	Spring se	emester/se	emester				
2023_	2024						
16.	The date	this descr	iption was prepared is				
25-1-20	24						
17.Av	ailable A	ttendance F	orms:				
10.11	morning	and evening	g, 95% morning and 75% e	evening	0.1		
18.Nu	mber of (	Credit Hour	s (Total) / Number of Unit	s (Total) Five ho	ours of theory +		
75 hour	clical s (Theoret	ical 30 hours	and practical 45 hours)/ 3Units	2			
19		administra	tor's name (mention all	if more than or	ne name)		
10.	Name: P	rof. Dr. Om	ar Ismail Mohsen				
	Email:						
20.	Course C	Objectives					
Course objectives: We explain to students the importance understanding environmental factors, including climatic and o oceanic conditions and their relationship to							
their relationship to							
21. Teaching and Learning Strategies							
Strategy	/						
22 Course Structure							
Week	Hours	Required	Unit or subject name	Lear	Evaluation		
		Learning		ning	method		
		Outcomes		met			
				hod			
1	2		Lecture 1: Concepts of ecology		Daily exam		
	theoretical		1 05		participation in		
	practical				lesson + writ		
					scientific report		
2	2		Lecture 2 Climatic factors		monuny exams		
	theoretical						
	practical						
3	2	The first month's exam is theoretical					
----	-------------	--	--				
	theoretical						
	practical						
4	2	Lecture 3 Light as an environmental factor					
	theoretical	C					
	practical						
5	2	Lecture 4 Heat and climate change					
	theoretical						
	practical						
6	2	Lecture 5 Water and its different forms					
	theoretical						
	practical						
7	2	Lecture 6: Dividing plants according to their need					
	theoretical	water					
	practical						
8	2	A quick review of the lectures included in the sec					
	theoretical	month exam and the second me					
	practical	theoretical exam					
9	2	Lecture 7 Air as an environmental factor					
	theoretical						
	practical						
10	2	Lecture 8 Topographic factors and their impact					
	theoretical	the environment					
	practical						
11	2	Lecture 9: Soil as an important environmental fa					
	theoretical	in the life of plants					
	practical						
12	2	Lecture 10: The concept of biotic factors and t					
	theoretical	impact on the environment					
	practical						
13	2	Lecture 11: The effect of animals on plants and t					
	theoretical	environment					
	practical						
14	2	Lecture 12, the concept of environmental pollut					
	theoretical	with the third month exam					
	practical						
15	2	Lecture 1: Concepts of ecology					
	theoretical						
	practical						

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

#### 24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Ecology, Dr. Hikmat Abbas Al-Ani and Dr. R Hashim Bakr, 1984.
Main references (sources)	Environmental science Dr. Hikmat Abbas Al-Ani Dr. Raad Hashim Bakr, 1986. Second edition.
Recommended books and references (scientific	Plant ecology, Dr. Majeed Rashid Al-Hilli and Hikmat Abbas Al-Ani.
journals, reports…)	
Electronic References, Websites	Plant ecology, Dr. Mohamed Ahmed Mujahid, 20 Egypt.
	Plant ecology (theoretical part), Dr. Mohamed As
	Sallo M and D. Suhail Nader, 2007-2008, Dama
	University.
	Environmental science and pollution Dr. Hussein Ali
	Saadi 2002, College of Education for Girls.

Plant ecology (theoretical part), Dr. Qasim Muham
Shinawa - 2016, Al-Muthanna University.
Environmental science and pollution Dr. Hussein Al
Saadi 2002, College of Education for Girls.

		Course I	Description For	m	
1. (	Course Nar	ne			
Plant	Breeding				
2. (	Course Cod	e:			
AFC19	948				
3. 5	Semester /	Year: Course Sprin	ng		
2023	2024	<b>▲</b>	0		
		Deres and in Data			
$\frac{4.1}{25.1.2}$		Preparation Date			
<u>23-1-2</u>	0 <b>24</b> Availahle A	ttendance Forms			
J. 1	Direct				
6. ]	Number of	Credit Hours (Total) /	Number of Units	(Total) 75/5	
1	norning and	d evening, 95% morni	ing and 75% evening	ng	
7. (	Course ad	ministrator's name (	mention all, if mo	pre than one r	name)
1	Name: Prof	Dr. Zeyad Abdul-Jal	bar Abdul-Hamed		
I	Email: <u>ag.z</u>	eyad.abdul-hamed@	<u>uoanbar.edu.iq</u>		
	_		-		
		Course	e Objectives :		
8			-		
foundat theoreti 9. Strategy	ions for ical and prac Feaching an I I (	designing and ana tical plant breeding d Learning Strategies A - Expanding the studen B- Access to recent and cr C-Learn about methods for	Iyzing       relevant to l         relevant in j         s         t's theoretical and pratical experiments relation processing, processing processing, processing processing, processing processing, processing processing, procesing, processing, proc	For genetic engineration of the second secon	ding eding tions
	S	urrounding the research p	plant breeding		
10. Co	ourse Struct	ure			
Week	Hours	Required Learning	Unit or subiect	Learning	Evaluation
		Outcomes	name	method	method
1(30 hours theoretical + 45 practical) (75 hours 5 hours (2 + 3)theoretical and practical		Introduction to the history of plant breeding, the first researchers in genetics and plant breeding	theoretical and practical	Theoretical and practical tests	
2	5	Reproduction systems in plants, sexual reproduction and	theoretical and practical	theoretical and practical	Theoretical and practical tests

Г Г		1			1
3	5	theoretical and practical	Cell, nucleus, chromosome, nitrogenous bases, cistron, codon, and gene	theoretical and practical	Theoretical and practical tests
4	5	theoretical and practical	Genetic variations, mutagens and mutations, qualitative and quantitative traits, and major and minor genes.	theoretical and practical	Theoretical and practical tests
5	5	theoretical and practical	Society genetics and Hardy-Weinberg's law, genetic action	theoretical and practical	Theoretical and practical tests
6	5	theoretical and practical	First month exam	theoretical and practical	Theoretical and practical tests
7	5	theoretical and practical	Mixed varieties with multiple parents, and their development, development of breeds, transfer of traits to breeds, isolation distances	theoretical and practical	Theoretical and practical tests
8	5	theoretical and practical	Quantitative genetics, improving crop yield and the genes responsible for it,	theoretical and practical	Theoretical and practical tests
9	5	theoretical and practical	Breeding self- pollinating crops, raising pure lines, and preserving the purity of the variety.	theoretical and practical	Theoretical and practical tests
10	5	theoretical and practical	Breeding cross- pollinated crops, quantitative selection, selection evidence, and developing strains, hybrids, and even pairs	theoretical and practical	Theoretical and practical tests
11	5	theoretical and practical	The theory of hybrid vigor, repetitive selection of all types, prediction of the yield	theoretical and practical	Theoretical and practical tests

			of hybrids and synthetic varieties, method of hybridizing yellow corn plants.		
12	5	theoretical and practical	Breeding vegetative crops, reproduction and variety selection	theoretical and practical	Theoretical and practical tests
13	5	theoretical and practical	Second month exam	theoretical and practical	Theoretical and practical tests
14	5	theoretical and practical	Education to resist various epidemic	theoretical and practical	Theoretical and practical tests
15	5	theoretical and practical	Applications of genetic engineering in plant breeding and genetically modified plants,	theoretical and practical	Theoretical and practical tests

1-Weekly tests (quiz) and semester and final exams (theoretical and practical).

2- Interaction within the lecture.

3- Attendance.

4- Commitment and discipline within the classroom and laboratory.

5- Preparing scientific reports, providing scientific explanations and presenting them

6-Expanding the student's theoretical and practical understandings

7- Learn about modern techniques relevant to plant breeding

8- Identify the surrounding factors related to the science of plant breeding

9-Learn about plant breeding and field planning operations.

12. Learning and Teaching Resources				
Required textbooks (curricular books, if any)	Book of Plant breeding and improvement			
Main references (sources)	Book of The basics of breeding and inheriting field crops			
Recommended books and references (scientific	Book of Principles of selection and plant			
journals, reports)	genetic improvement			
Electronic References, Websites				
	hpp// Principles of plant breeding. com.			

<b>Course Description Form</b>							
1. C	ourse Na	ame	:				
Experi	ment De	esig	n				
2. C	ourse Co	ode:					
AFC193	2						
3. S 2023_2	emester 2024	/ Ye	ear				
4. D	escripti	on P	reparation Date:				
25_1_2	2024		2				
5. A	vailable	Atte	endance Forms:				
Γ	Direct						
6. N	lumber o	f Cr	edit Hours (Total) /	Number	of Units (	Total) 75 / 5	
n	norning a	nd e	vening, 95% morni	ing and 7	5% evenin	g	
7. C	Course a	dmi	nistrator's name (	mention	all, if mo	re than one r	name)
N	lame: Pr	of. C	Pr. Zeyad Abdul-Jal	bar Abdı	ıl-Hamed		
E	mail: <u>ag</u>	<u>.zey</u>	ad.abdul-hamed@	uoanbar	<u>.eau.iq</u>		
			Course	e Objectiv	/es:		
8.				,			
The stu	dent learr	ıs ab	out the scientific fou	ndations	Learn a	hout modern	
designin	g and	ana	lyzing theoretical an	nd practi	technolog	ies relevant t	o designing
experim	ents				experime	nts	0 0
9. T	eaching	and	Learning Strategies	s			
Strategy		<b>A</b> -	· Expanding the studen	t's theoret	ical and prac	tical understand	lings
		<b>B</b> - <i>A</i>	Access to recent and cr	ritical expe	riments rela	ted to experiment	ntal design
		C-L surr	ounding the research c	or designin	g experimen ent	ts, processes, an	d conditions
		~ ~ ~ ~ ~		r			
10. Co	urse Stru	ictur	e				
Week	Hours		Required Learning	Unit or s	ubject	Learning	Evaluation
			Outcomes	name		method	method
	(30 hours	S	Look and work	Introdu	ction to the	theoretical	Theoretical
1	theoretic 45 practi	al + cal)	Explanation and interpretation with	history first res	of statistics, earchers in	practical	and practical
45 practical)Use meansInst researchers in(75 hoursUse meansdesigning experime5 hours (2 +clarificationstudying statistical			10515				
		g statistical					
2	3)		Look and work	tests	luction to	heoretical and	Theoretical
Z	5		Explanation and	the histor	y of	practical	and practical
			interpretation with	statistics.	the first	*	tests

		Use means Electronic clarification	researchers in statistics and experimental design,		
3	5	Look and work Explanation and interpretation with Use means Electronic clarification	The importance of designing experimen for the researcher	theoretical and practical	Theoretical and practical tests
4	5	Look and work Explanation and interpretation with Use means Electronic clarification	Sources of differenc in the design of experiments	theoretical and practical	Theoretical and practical tests
5	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely randomized CRD isometric design	theoretical and practical	Theoretical and practical tests
6	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve iso-repeated whole-randomized CRD exercises	theoretical and practical	Theoretical and practical tests
7	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely randomized CRD design with unequal replicates.	theoretical and practical	Theoretical and practical tests
8	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve the exercises a complete randomi CRD isometric replication design.	theoretical and practical	Theoretical and practical tests
9	5	Look and work Explanation and interpretation with Use means Electronic clarification	Randomized comple block design (RCBI	theoretical and practical	Theoretical and practical tests
10	5	Look and work Explanation and interpretation with Use means Electronic clarification	RCBD Randomized Complete Block Design Exercises	theoretical and practical	Theoretical and practical tests
11	5	Look and work Explanation and	Missed View Rating	theoretical and practical	Theoretical and practical

		interpretation with Use means Electronic clarification			tests
12	5	Look and work Explanation and interpretation with Use means Electronic clarification	latin square design	theoretical and practical	Theoretical and practical tests
13	5	Look and work Explanation and interpretation with Use means Electronic clarification	split experiences	theoretical and practical	Theoretical and practical tests
14	5	Look and work Explanation and interpretation with Use means Electronic clarification	Split plot experiments exercises	theoretical and practical	Theoretical and practical tests
15	5	Look and work Explanation and interpretation with Use means Electronic clarification	Orthogonal comparisons experiments and trend analysis	theoretical and practical	Theoretical and practical tests

1-Weekly tests (quiz) and semester and final exams (theoretical and practical).

- 2- Interaction within the lecture.
- 3- Attendance.

4- Commitment and discipline within the classroom and laboratory.

5- Preparing scientific reports, providing scientific explanations and presenting them

6-Expanding the student's theoretical and practical understandings

7- Learn about modern techniques relevant to Design of experiments

8- Identify the surrounding factors related to the science of Design of experiments9-Learn about Design of experiments and field planning operations.

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

1- Course Name:				
plant classification				
2- Course Code:				
AFC1926				
3- Semester / Year:				
2023_2024				
4- Description Prep	paration Date			
25_1_2024				
5- Available Attenda	ance Forms:			
Direct				
6- Number of Credit	Hours (Total) /			
Number of Units (To	tal): 75 / 5			
7- Course administ	trator's name (mention all, if more than one name)			
Name: Assist Prof. A	Abdullsamad Hashim Noaman			
Email: <u>ag.abdullsama</u>	ad.hashim@uoanbar.edu.iq			
8- Course Objective	S			
Course Objectives	<ul> <li>The student will be acquainted with the scientific bases in plant classification, both theoretical and practical.</li> <li>Expand the student's theoretical and practi knowledge.</li> <li>Getting acquainted with the mode techniques related to pla classification.</li> <li>Identifying biotic and abiotic factors related to plant classification.</li> </ul>			
9- Teaching and Lea	arning Strategies			
Strategy 3- P k k 4- S p fa	Providing students with theoretical and practical scientific nowledge on the subject of plant classification of inds. tudents benefit from practical experiences in the subject lant classification and its relationship to various grow actors and the conditions surrounding the plant.			

10- Cours	se Structure	I			
Week	Hours	Required	Unit or subject	Learning	Evaluation
		Learning	name	method	method
		Outcomes			
1	5(2theory+ practical)	plant classification	Taxonomy , history , importance and relationship to other sciences	Giving lectures (theoretical and practical) (e- learning)	Daily and monthly test + scores on activities, reports and attendance
2	5	plant classification	Systems of Classification ( Artificial , Natural , Phylogenetic )		
3	5	plant classification	Nomenclature, Common names		
4	5	plant classification	Scientific nomenclature		
5	5	plant classification	Spermatophytes Class Gymnospermae Class Angiospermae		
6	5	plant classification	Monocotyledone Dicotyleadone		
7	5	plant classification	Phytography Terminology of Vegetative Organs		first month
8	5	plant classification	Roots and shapes		
9	5	plant classification	Stems and shapes		
10	5	plant classification	Buds, Leaves		
11	5	plant classification	Leaf parts , Simple leaf , Compound Leaf , Stipules , Visture types		
12	5	plant	Flower, Floral		

		classification	parts , Aestivation	
			Placentation	
13	5	plant	Inflorescences,	
		classification	Cymose, Racemose	
14	5	plant	Fruits and Seeds,	
	_	classification	Simple fruits,	
			Aggregate fruits	
15	5	plant	Pollen Grains	
	C	classification	Pollination,	second month
			Pollination,	
			self pollination and	exam
			cross pollination	CAUIII
			-	

1-Weekly exams (quiz) and quarterly and final exams (theoretical and practical). 2- Interaction within the lecture.

- 3- Attendance.
- 4- Commitment and discipline in the classroom and laboratory.
- 5- Preparing scientific reports and presenting them with scientific explanations.

12- Learning and Teaching Resources				
Required textbooks (curricular books, if any)	Classification of Spermatophytes			
Main references (sources)	Morphology and anatomy			
Recommended books and references (scientific	Plant Physiology			
journals, reports)				
Electronic References, Websites				

1. Course Name:         Seed technology         2. Course Code:         AFC1931         3. Semester / Year:         2023-2024         4. Description Preparation Date:         25-1-2024         5. Available Attendance Forms:         Direct         6. Number of Credit Hours (Total) / Number of Units (Total)         No. of Credit (25) / No. of Unit (3)         7. Course administrator's name (mention all, if more than one name)         Name: Ahmed Chyad Ali         Email: ag.ahmedch.ali@uoanbar.edu.iq				
Seed technology         2. Course Code:         AFC1931         3. Semester / Year:         2023-2024         4. Description Preparation Date:         25-1-2024         5. Available Attendance Forms:         Direct         6. Number of Credit Hours (Total) / Number of Units (Total)         No. of Credit (25) / No. of Unit (3)         7. Course administrator's name (mention all, if more than one name)         Name: Ahmed Chyad Ali         Email: ag.ahmedch.ali@uoanbar.edu.iq				
2. Course Code:         AFC1931         3. Semester / Year:         2023-2024         4. Description Preparation Date:         25-1-2024         5. Available Attendance Forms:         Direct         6. Number of Credit Hours (Total) / Number of Units (Total)         No. of Credit (25) / No. of Unit (3)         7. Course administrator's name (mention all, if more than one name)         Name: Ahmed Chyad Ali         Email: ag.ahmedch.ali@uoanbar.edu.iq				
AFC1931 3. Semester / Year: 2023-2024 4. Description Preparation Date: 25-1-2024 5. Available Attendance Forms: Direct 6. Number of Credit Hours (Total) / Number of Units (Total) No. of Credit (25) / No. of Unit (3) 7. Course administrator's name (mention all, if more than one name) Name: Ahmed Chyad Ali Email: ag.ahmedch.ali@uoanbar.edu.iq				
<ol> <li>Semester / Year:</li> <li>2023-2024</li> <li>Description Preparation Date:</li> <li>25-1-2024</li> <li>Available Attendance Forms:         <ul> <li>Direct</li> <li>Number of Credit Hours (Total) / Number of Units (Total)</li> </ul> </li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>Course administrator's name (mention all, if more than one name)         <ul> <li>Name: Ahmed Chyad Ali</li> <li>Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul> </li> </ol>				
<ul> <li>2023-2024</li> <li>4. Description Preparation Date:</li> <li>25-1-2024</li> <li>5. Available Attendance Forms: <ul> <li>Direct</li> <li>6. Number of Credit Hours (Total) / Number of Units (Total)</li> </ul> </li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>7. Course administrator's name (mention all, if more than one name) <ul> <li>Name: Ahmed Chyad Ali</li> <li>Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul> </li> </ul>				
<ul> <li>4. Description Preparation Date:</li> <li>25-1-2024</li> <li>5. Available Attendance Forms: <ul> <li>Direct</li> </ul> </li> <li>6. Number of Credit Hours (Total) / Number of Units (Total)</li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>7. Course administrator's name (mention all, if more than one name)</li> <li>Name: Ahmed Chyad Ali</li> <li>Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul>				
<ul> <li>25-1-2024</li> <li>5. Available Attendance Forms: Direct</li> <li>6. Number of Credit Hours (Total) / Number of Units (Total)</li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>7. Course administrator's name (mention all, if more than one name) Name: Ahmed Chyad Ali Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul>				
<ul> <li>5. Available Attendance Forms:</li> <li>Direct</li> <li>6. Number of Credit Hours (Total) / Number of Units (Total)</li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>7. Course administrator's name (mention all, if more than one name)</li> <li>Name: Ahmed Chyad Ali</li> <li>Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul>				
6. Number of Credit Hours (Total) / Number of Units (Total) No. of Credit (25) / No. of Unit (3) 7. Course administrator's name (mention all, if more than one name) Name: Ahmed Chyad Ali Email: ag.ahmedch.ali@uoanbar.edu.iq				
<ul> <li>6. Number of Credit Hours (Total) / Number of Units (Total)</li> <li>No. of Credit (25) / No. of Unit (3)</li> <li>7. Course administrator's name (mention all, if more than one name)</li> <li>Name: Ahmed Chyad Ali</li> <li>Email: ag.ahmedch.ali@uoanbar.edu.iq</li> </ul>				
No. of Credit (25)/ No. of Unit (3) 7. Course administrator's name (mention all, if more than one name) Name: Ahmed Chyad Ali Email: ag.ahmedch.ali@uoanbar.edu.iq				
Name: Ahmed Chyad Ali Email: ag.ahmedch.ali@uoanbar.edu.iq				
Email: ag.ahmedch.ali@uoanbar.edu.iq				
Linan, ag.anneuen.an @ uoanoa.euu.iq				
8. Course Objectives				
<b>Course Objectives</b> introducing the student to a set of grain and seed production				
techniques and the suitability of these seeds to the factors				
Storage, marketing, and application of all health conditions that qual				
for the manufacturing process of these grains				
9. Teaching and Learning Strategies				
Strategy Graduating a specialized cadre who understands the selection of				
technical and practical methods in testing healthy and prepared seeds.				
For a specific manufacturing process and producing excellent quality				
this process				
10. Course Structure				
Week         Hours         Required         Unit or subject name         Learning         Evaluation				
Learning method method				
Outcomes				
1 5 Seeds - meaning - Theoretical + Reports				
importance - diagnosis practical material +				
and seed examination observations +				
world and Iraq daily exams				
2     5     Seed chemical     Theoretical +     Reports				
compositions - importan practical material +				
- cultivation and quality observations				

				+ daily
				exams
3	5	Dormancy in seeds -	Theoretical +	Reports
		factors affecting	practical	material +
		dormancy		observations
				+ daily
				exams
4	5	Vitality and germination	OTheoretical +	Reports
			practical	material +
				observations
				+ daily
				exams
5	5	Growth regulators for	Theoretical +	Reports
		seeds and plants	practical	material +
				observations
				+ daily
				exams
6	5	Midterm 1	Theoretical +	Reports
			practical	material +
				observations
				+ daily
				exams
7	5	Certified seed producti	OTheoretical +	Reports
		production fields	F	material +
		1		observations
				+ daily
				exams
8	5	Field inspection	Theoretical + practical	Reports
			I	material +
				observations
				+ daily
				exams
9	5	Seed certification and	Theoretical + practical	Reports
		preparation system		material +
				observations
				+ daily
				exams
10	5	Harvesting, drying and	Theoretical + practical	Reports
Ĺ		storing seeds	1	

					matarial	
					+ dally	
				Theorem	exams	
11	5		Pests and diseases of seeds in storage and	practical	Reports	
			moisture content -	_	material +	
			healthy moisture		observations	
			levels		+ daily	
					exams	
12	5		Midterm 2	Theoretical +	Reports	
				practical	material +	
					observations	
					+ daily	
					exams	
13	5		Preparing seeds for	Theoretical +	Reports	
			processing	practical	material +	
					observations	
					+ daily	
					exams	
14	5		Legislation and laws for	Theoretical +	Reports	
	0		trading certified and	practical	material +	
			approved seeds		observations	
15	۲.		General review +	Theoretical +	Banarta	
15	Э		discussions + solving	practical	Reports	
			questions		material +	
					observations	
					+ daily	
					exams	
Course Ev	aluation					
Distributin	g the score	out of 100 accord	ding to the tasks assign	ned to the student	such as daily	
preparation	n, daily ora	l, monthly, or writt	en exams, reports et	с		
11. Lea	rning and	Teaching Resou	Irce			
Required textbooks (curricular books, if any) SEED TECHNOLOGY- R.L. Agarwal						
Main refere	Main references (sources)					
Recommend	Recommended books and references					
(scientific jo	(scientific journals, reports)					
Electronic R	References,	Websites				
			I			

1. 00	ursel	Name				
Oil an	Oil and sugar crops					
2. Co	2 Course Code:					
AFC	1929					
3. Se	meste	er / Year:				
Secon	d Sem	nester (Spring) 2023-20	)24			
4. De	escript	tion Preparation Date:	:			
25-1-2024		2				
5. Av	ailabl	e Attendance Forms:				
At	tendar	nce (study and exams)				
6. Ni	imber	of Credit Hours (Total)	<u>) / Nu</u>	mber of Units (7	Total)	
75	hours	(30  theoretical + 45  pr)	ractica	1) / Number of	Units : 3	
7. Co	ourse	administrator's name	e (mer	ntion all, if mor	e than on	e name)
Na En	ime: A	sst.Prof.Dr.Ismail Ahr	med Sa abar o	arhan + Asst. te du ia	eacher Am	er Hashem
	liali. a	g.isinan.anneu@u0an	ilbai.e	uu.iq		
0. 00				Discomination of		the fields of
Course	Object	tives	4	4 – Dissemination of knowledge in the fields of		
1 – Providin	g stude	nts with knowledge of the	a	on its application to serve the community		
nature and	function	n of agricultural methods from	man S	5- Providing the agricultural sector with specialized		
academic a	nd profe	essional point of view		adres with expertise	knowledge a	and skill in the
2- Understa	and the	nature of agriculture work bas	sea fi	eld of agriculture an	d production	to provide food
3 – Providin	a stude	nte with information related to	s	ecurity	·	•
programs a	nd files	related to farming methods		-		
9. Te	achino	and Learning Strategi	lies			
Strategy	1-	Adopting the method of giving	lectures	s and linking each tor	nic with exam	ples from the
Strategy	rea	ality of agricultural work.	, rectured			
	2- ( du	Giving the students some simp	ole pract	ical exercises that are	e discussed by	them and solved
	giv	ve the subject a kind of interact	ction.	of all students in the	Section with	the professor, to
	3 -	Demonstrating the students' a	ability to	give some possibiliti	ies and other	ways to solve
	4- ]	ne problems. Preparing reports on specific t	topics.			
10. Cou	rse St	ructure				
Week	Hour	Required Learning	Unit o	or subject name	Learning	Evaluation
	s	Outcomes			method	method
the	5	Providing students with	Oil cro	ps: their definition,	Ettendance	Discussion, daily
first		information about oil crops and their importance in	their ec	conomic importance, ost important crops the		exams, monthly exams
		providing food security	represe	ent, oils and their		
			types.			

the second	5	Statement of the importance sunflower as an oil crop	Sunflower: its importance, methods of cultivation, suitable soil for it, date of planting it, crop service, harvest and pests that infect it	Ettendance	Discussion, daily exams, monthly exams
the third	5	Explanation of the importance of sesame as an oil crop	Sesame: methods of cultivation, its economic importance, suitable soils for it, and the service harvest of the crop	Ettendance	Discussion,daily exams,monthly exams
The Fourth	5	Statement of the importance Pea nut as an oil crop	Pea nut:its importance, methods of cultivation, suitable soil for it, its harvest and the pests that infect it	Ettendance	Discussion,daily exams,monthly exams
Fifth	5	Explanation of the importanc soybean as an oil cropSoybean:its importance , methods of cultivation, suitable soil for it, its harvest and pests that affect itEttendance		Discussion,daily exams,monthly exams	
Sixth	5	Statement of the importance safflower as an oil crop	Safflower:economic importance, origin, types varieties, botanical descript suitable environment and soil and crop service processes	Ettendance	Discussion,daily exams,monthly exams
Seventh			First month exam		•
Eighth	5	Statement of the importance rapeseed as an oil crop	Rapeseed:economic importance, origin, Types and varieties, botanical description, appropriate environment	Ettendance	Discussion, daily exams, monthly exams
Ninth	5	Explanation of the importance castor as an oil crop       Castor: its importance, methods of cultivation, suitable soil for it, the service of the crop and its       Ettendance       D		Discussion, daily exams, monthly exams	
The Tenth	5	Statement of the importance sugar crops as strategic crops	Sugar crops: an introduction historical overview of sugar cane, its geographical distribution, suitable soils, and its cultivation methods.	Ettendance	Discussion, daily exams, monthly exams
Eleven	5	Explanation of the importance sugar cane as a major crop for the production of sugar	Soil and crop service operati (hoeing, fertilization, grafting, grafting) for sugar cane plants, sugar cane breeding methods, sugar cane genetics	Ettendance	Discussion, daily exams, monthly exams
Twelveth	5	Explain the importance of sugar cane as an industrial crop	Chemical components of sugar cane plants, bush control operations, diseases and insects of sugarcane plants, ripening, harvesting production of raw sugarEttendance ex ex ex		Discussion, daily exams, monthly exams
Thirteenth	5	Explanation of the importance of sugar beet as an industrial crop	Sugar beet: its economic importance, geographical distribution, development of sugar beet cultivation, the most important problems of	Ettendance	Discussion, daily exams, monthly exams

			cultivation, stages of its growth and methods of breeding it		
Fourteenth	5	Clarification of service operations sugar beet crop	soil and cop service factors Ettendance Discussion, daily exams, monthly exams (planting date, planting methods, seed classifications crop service operations (mowing, weeding, fertilizing, irrigation, harvesting, yield, agricultura cycles)		
Fifteenth			Second month exam		
11. Cc	ourse l	Evaluation			
<ul> <li>2- Giving them an exercise as homework and asking the students to bring the solution on a separate sheet in the subsequent lecture.</li> <li>3- Giving the students a specific case study and dividing the students into groups to write a report about that study</li> <li>4 - Evaluation through daily and monthly examinations</li> </ul>					
Required textbooks (curricu books, if any)			<ol> <li>Mahmoud Al-Shaer and others. 2015. Oil, sugar and fiber crops</li> <li>Al-Baldawi and others. 2014. Principles of field crop production.</li> <li>Safar, Nasser Hussein. 1990. Oil and sugar crops.</li> <li>4 - Rizk and Ali. 1981. Oil and sugar crops</li> </ol>		
books, if a	ny)		4 - Rizk and Ali. 1981. Oil and sugar crops		
books, if a Main refere	ences (	(sources)	4 - Rizk and Ali. 1981. Oil and sugar crops Using the results obtained from scientific research, master's the and doctoral dissertations		
Main refer Recommen references reports)	ny) ences ( nded s (scie	(sources) books and ntific journals,	<ul> <li>4 - Rizk and Ali. 1981. Oil and sugar crops</li> <li>Using the results obtained from scientific research, master's the and doctoral dissertations</li> <li>Scientific articles and periodic reports on the reality of agriculture from FAO and others</li> </ul>		

Forage and pastures crops

2- Course Code:

#### AFC1936

3- Semester / Year:

Semester 2/ Year: 2023-2024

4- Description Preparation Date:

#### 25-1-2024

5- Available Attendance Forms:

Classrooms and Laboratories

6- Number of Credit Hours (Total): / Number of Units (Total):

Number of Credit Hours (Total): 75 / Number of Units (Total): 3

# 7- Course administrator's name (mention all, if more than one name) Name: Dr. Abdullah Mahmood Saleh

Email: ag.abdullah.mahmood@uoanbar.edu.iq

8-	Course	Objectives
----	--------	------------

Course Objectives	<ul> <li>Introducing the importance of forage crops</li> <li>Studying the ways to improve fodder production, storage a utilization</li> <li>Studying the necessary ways to improve forage production, stora and utilization</li> </ul>
9- Teaching and Learning	ng Strategies

Strategy	1. The method of giving lectures.
	2. Explanation, interpretation, and linking method.
	3. Explanation method using electronic illustrations.
	4. field observations

#### 10- Course Structure

Week	Hours	Required learning outcomes	Unit or topic name	Education method	Evaluation method
1	5	Introduction	A historical overview of the beginning and	Lectures	Exams
		to forage	development of forage crops and their		
		crops	importance in human and animal life,		
			taxonomy of forage crops and places of		
			origin		
2	5	Legume	Leguminous forage crops and their	Lectures	Exams
		forage crops	importance		
3	5	Legume	Alfalfa, its types, importance, appropriate	Lectures	Exams
		forage crops	forage cropsenvironment, methods of cultivation, field		
		_	practice.		

	-			<b>T</b>	Б
4	5	LegumeClover, its types	, importance, favorable	Lectures	Exams
		forage cropsenvironment, me	ethods of cultivation, field		
		practice.	•	<b>.</b>	F
5	5	Forage crops Annual Medic, i	ts types, importance,	Lectures	Exams
		appropriate envi	ronment, methods of		
		cultivation, field	practice.	_	
6	5	Forage crops Sweet clover, it	s types, importance,	Lectures	Exams
		appropriate envi	ronment, methods of		
		cultivation, fiel	d practice		
7	5	Grass Sorghum, and S	udan grass its types,	Lectures	Exams
		summerimportance, app	ropriate environment,		
		forage cropsemethods of culti	vation, field practice.		
8	5	GrassCorn and millet	its types, importance,	Lectures	Exams
		summerappropriate envi	ronment, methods of		
		forage cropscultivation, field	practice.		
9	5	Grass winter barley, oats and	rye grass, types and	Lectures	Exams
		forage crops varieties, field p	practice		
10	5	Forage crops Intercropping ar	nd agricultural cycles	Lectures	Exams
11	5	Forage crops Harvesting and	storage	Lectures	Exams
12	5	Manufacture Manufacture of	hay and silage by	Lectures	Exams
		of hay and traditional and n	nodern methods, aerobic		
		silageand anaerobic re	eactions, compounds		
		resulting from fe	ermentation.		
13	5	ToxicToxic substance	s and compounds in	Lectures	Exams
		substancesforage crops and	l ways to prevent them		
		and			
		compounds			
		in forage			
		crops			
14	5	Estimation of Dry matter, dige	stibility and protein,	Lectures	Exams
		forage quality			
		trail			
15	5	Estimation of Estimation of ca	rbohydrates, fiber and ash	Lectures	Exams
		forage quality	•		
		trail			
	~				

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.

12- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Forage Crops / Written by Dr. Muhammad Al-
	Sayyid Radwan and Dr. Abdullah Qasim
	Al-Fakhri / University of Mosul / 1975
	Forage crops and pastures / written by
	Ramadan Al-Takriti and Dr. Hikmat As
	Rumi and Dr. Tawakkol Younis
	University of Baghdad / 1981
Main references (sources)	Tropical Forage Legumes.Edit By P.J.Skern
( )	Rome.1977

Recommended books and references	Forage Seed Production. Temperate Spec
(scientific journals, reports)	international.1997.U.K PP420
Electronic References, Websites	https://en.wikipedia.org/wiki/Forage

#### 1. Course Name:

#### Biochemistry

#### 2. Course Code:

#### AFC1918

#### 3. Semester / Year:

#### Spring semester of 2023-2024

#### 4. Description Preparation Date:

#### 25-1-2024

5. Available Attendance Forms:

#### Physical + laboratory

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

(75) Number of Units (3)

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

#### Name: Hamid abdalkader ajaj

Email: ag.hamid.abdalkader@uoanbar.edu.iq

#### 8. Course Objectives

#### Course Objectives

The course aims to introduce the student to the chemical structures and the vital importance of organic compounds in living cells such as all kinds of carbohydrates, all kinds of fats, amino acids and all kinds of proteins, nucleic acids (DNA and RNA), enzymes and their mechanism of action and factors affecting their effectiveness. As well as introducing the student to the most important qualitative and quantitative reagents for sugars, fats and proteins

#### 9. Teaching and Learning Strategies

#### Strategy

Definition of biochemistry, a brief review of biochemistry vocabulary that will be given during the semester.

• Enable students to acquire knowledge, science, and knowledge of plant cells, cell components and their functions.

• Introducing students to carbohydrates, their importance and their divisions.

• Introducing students to fats - their definition - their importance - fatty acids - their divisions - their structures - their interactions.

• Introducing students to amino acids - their divisions - their structures - properties of amino acids - their interactions.

• Introducing students to proteins - their definition - their divisions - levels of protein synthesis - denaturation.

• Introducing students to nucleic acids - their importance - nucleotides - their functions - their structure - types of nucleic acids.

• Introducing students to enzymes - their definition - the mechanism of enzyme action - their classification - inactive and active enzymes - factors affecting the speed of an enzymatic reaction.

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation				
		Outcomes		method	method				
25/2/2024	5	Theoretical and practical	Introduction to the science of biochemistry - the components and functions of a living cell.	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework				
3/3/2024	5	Theoretical and	Carbohydrates -	In-person +	A monthly exam,				

#### 10. Course Structure

		practical	definition - importance - divisions - (monosaccharides, polysaccharides, polysaccharides)	laboratory	laboratory exam, assignments, and homework
7/3/2024	5	Theoretical and practical	Monosaccharides - Analogs in monosaccharides - Derivatives of monosaccharides - cyclic structure of sugars	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
10/3/2024	5	Theoretical and practical	Low Polysaccharides - Reducing and Non- Reducing Types	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
17/3/2024	5	Theoretical and practical	Polysaccharides - their homogeneous and heterogeneous types	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
19/3/2024	5	Theoretical and practical	first month exam	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
24/3/2024	5	Theoretical and practical	Fats - definition - importance - fatty acids - divisions - structures - interactions - geometric similarities of fatty acids	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
27/3/2024	5	Theoretical and practical	Categories of fats - simple fats - their types (oils, fats and waxes) - their structures - fat constants	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
31/3/2024	5	Theoretical and practical	Compound and Derived Fats - Types - Structures	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
7/4/2024	5	Theoretical and practical	Amino acids - their divisions - structures - properties of amino acids - their interactions	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
14/4/2024	5	Theoretical and practical	Peptides - proteins - their definition - their divisions - levels of protein synthesis - denaturation	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
21/4/2024	5	Theoretical and practical	second month exam	In-person + laboratory	A monthly exam, laboratory exam,

					assignments, and homework
28/4/2024	5	Theoretical and practical	Nucleic acids - their importance - nucleotides - their functions - their structure - types of nucleic acids	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
2024/ 5/ 5	5		Enzymes - their definition - the mechanism of enzyme action - their classification - inactive and active enzymes - factors affecting the rate of the enzymatic reaction	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework
12/5/2024	5		Exam	In-person + laboratory	A monthly exam, laboratory exam, assignments, and homework

Biochemistry is a basic subject given to some scientific departments at different academic levels. At the end of the semester, the student is able to collect sufficient information about the components of the living cell, the organic compounds that make up it, and their vital importance within the bodies of living organisms, whether plants, animals, or humans. It is considered a basis for other courses.

#### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Biochemistry - Part One (1) and (2). Written by Dr. Ali Hassan Al-Daoudi.
	External sources:
Main references (sources)	Basics of Biochemistry - written by Dr. Basil
	Kamel Al-Dalaly.
Recommended books and references (scientific	Practical Biochemistry Written by: Dr. Ali
journals, reports)	Hassan Al-Dawadi
Electronic References, Websites	S.P.Singh.2007. A Textbook of Biochemistry,
	Fourth Edition , CBS
	Publishers Distributors& New-Delhi.
	Banglore.

1. Coi	1 Course Name					
Principle	Principles of field crops					
2. Coi	irse Code	2				
AFC1912	20					
3. Sen	nester / Y	Year: Autumn				
2023_202	24					
4. Des	scription	Preparation Da	ate:			
25-1-2024	•	•				
5. Ava	ailable At	tendance Forms	5:			
pre	sence only	у				
6. Nu	mber of C	Credit Hours (To	otal) / Num	ber of Units (To	otal):	
45 ]	hours per	semester/3 hou	rs per week	C. C		
7. Co	urse adn	ninistrator's na	me (ment	ion all, if more	than one name)	
Nai	ne: Ahm	ed Shehab Abd	ullah Ram	adan		
Em	ail: <u>ag.ah</u>	med.shehab@	uoanbar.ee	<u>du.iq</u>		
8. Coi	urse Obje	ctives				
Course Objectives			Tead from then crop impu serv post to p proc met	Teaching students the basics of field crop science from both theoretical and applied aspects, providing them with the required knowledge in growing field crops and how to deal with, manage, produce and improve them, and mastering the various crop service operations from planting to maturity and post-harvest operations, in addition to studying how to preserve and maintain the soil, sustaining its productivity, and mastering modern irrigation methods.		
9. Tea	aching an	d Learning Stra	tegies			
Strategy       -Education strategy, collaborative concept planning.         -Education strategy brainstorming.         -Education strategy notes series						
10. Cours	se Structu	ure				
Week	Hours	Required	Unit or	Learning	Evaluation method	
		Learning	subject	method		
		Outcomes	name			
		Guicomes	name			

		Introduction to		
1	3	crop science and recent statistics on food production in the world		
2	3	Morphological characteristics of field crop families		
3	3	Methods of classifying field crops		
4	3	Factors affecting crop production (heat, light, and CO2)		
5	3	Humidity, rain and water rating		
6	3	Semester exam		
7	3	Plowing and preparing the land for agriculture		
8	3	Crop service factors	Theoretical	Weekly, monthly and daily exams and
9	3	Seed and grain grading science	Theoretical	exam End of year.
10	3	Types of weeds and methods of its combating		
11	3	Agricultural cycles, their types and benefits		
12	3	Principles of crop breeding and improvement		
13	3	Stages of production and multiplication of seeds improved		
14	3	A brief idea about the most important crops grown in Iraq in the form of tables		
15	3	Semester exam		

The distribution is as follows: 15 marks for the monthly and daily exams and participation for the theoretical aspect for the first month, 15 marks for the monthly and daily exams and participation for the theoretical aspect for the second month, and 30 marks for the theoretical final for the final exams.

#### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Principles of field crops: Dr. Majeed Mohsen
	Al-Ansari and others, 1891, Higher Education
	Press, Iraq.
	2-Field crop production: Dr. Majeed Mohsen Al-

	<ul> <li>Ansari 1891, Dar Al-Kutub Press - University, Mosul.</li> <li>3-Production and improvement of field crops: Dr. Abdul Hamid Ahmed Al-Younis, 1883, Dar Al- Kutub Directorate for Printing and Publishing - Baghdad.</li> <li>4-Understanding crop production Dr. Hatem Jabbar Attia and Dr. Karima Muhammad Wahib 1898, Higher Education and Scientific Research Press.</li> </ul>
Main references (sources)	
Recommended books and references	Scientific research
(scientific journals, reports)	
Electronic References, Websites	Google

1- Course Name:

legume crops

2- Course Code:

AFC1939

3- Semester / Year: Semester

2023\_2024

4.Description Preparation Date:

25-1-2024

5. Available Attendance Forms:

in person

6.Number of Credit Hours (Total) 5 / Number of Units (Total) 3

45 hours per semester/3 hours per week

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

Name: Adil Hais Abdulkafoor & Amer Hashem Email: ag.adil.hais@uoanbar.edu.iq

8.Course Objectives : This course introduces the student to the crops of the winter and summer legume family, their scientific names, their botanical description, their economic importance, the dates and methods of their cultivation, the most important obstacles to their productivity, the environmental conditions affecting their growth and increasing their productivity, the most important pests and diseases that affect the plants of this family, and ways to combat them.

9. Teaching and Learning Strategies :

1-Understand the nature of the work of agricultural vocabulary.

2 - Distinguish between each of the types of cultivation and treatment methods.

3- Distinguishing between three terms (land, marketing, and ultimate beneficiary)

10. Course Structure :

• Training the student on how to use information sources to maintain and develop his basic information.

• Develop the student's style of transferring information to the work environment.

Training the student to conduct scientific research to solve problems at work and develop its methods

11.					
The week	hours	Required learning outcomes	<u>Unit/course or topic</u> <u>name</u>	education method	Evaluatio n method
1	5(2+3)	legume crops	Leguminous seed crops - the importance of legumes in nutrition.	electronic	Discussion, daily exams, monthly exams
2	5(2+3)	legume crops	symbiotic nitrogen fixation - formation of knots - cross-fertilization groups - engineering of nitrogen fixation genes.	electronic	Discussion, daily exams, monthly exams
3	5(2+3)	legume crops	Interlaced farming.	electronic	Discussion, daily exams, monthly exams
4	5(2+3)	legume crops	Beans - Origin - Geographical Distribution - Economic importance - Uses of Beans	electronic	Discussion, daily exams, monthly exams
5	5(2 +3)	legume crops	Nutritional value of beans - chemical composition of seeds - varieties - genetic sources.	electronic	Discussion, daily exams, monthly exams
6	5(2+3)	legume crops	Beans breeding programs - maturity - harvest - components of the yield	electronic	Discussion, daily exams, monthly exams
		first mo	nth exam		
7	5(2+3)	legume crops	Alkaloids: their composition, composition, effects and chemical extraction methodsChickpea - Economic importance and use - Chemical composition of chickpea seeds.	electronic	Discussion, daily exams, monthly exams
8	5(2+3)	legume crops	Varieties - Harvest - Nitrogen fixation for chickpeasmethods	electronic	Discussion, daily exams, monthly exams
10	5(2+3)	legume crops	Lentils - economic importance - nutritional value - maturity - harvest.	electronic	Discussion, daily exams, monthly exams
11	5(2 +3)	legume crops	Mong bean - economic importance - nutritional value - maturity - grit	electronic	Discussion, daily exams, monthly exams

12	5(2+3)	legume crops	Beans - economic importance - nutritional value - maturity - harvest.	electronic	Discussion, daily exams, monthly exams
13	5(2+3)	legume crops	Cowpea - economic importance - nutritional value - maturity - harvest.	electronic	Discussion, daily exams, monthly exams
14	5(2+3)	legume crops	Soybeans - economic importance - nutritional value - maturity - harvest	electronic	Discussion, daily exams, monthly exams
15	5(2 +3)	legume crops	Field pistachios - economic importance - nutritional value - maturity - harvest. Peas - economic importance - nutritional value - maturity - harvest	electronic	Discussion, daily exams, monthly exams
	second month exam				

# 12. Infrastructure

Required readings: • Course Books • other.	Production of field crops, d. Salah El-Din Abdel- Razzaq Shafshak and d. Abdel Hamid Al-Sayed Al-Dababi, 2008, Dar Al-Fikr Al-Arabi, Egypt. 1- Pulses Crops, Dr. Hamid Gloub Ali 1990 Higher Education Press - Mosul. 2- Principles of field crop production, Martin, Leonard, and stamp, 3rd edition, Macmillan publishing company, inc 1975 3- The wheat book, principles and practice, Ander son w.k. , and j.r. Garling. Australia. 2006. 4- Production and Improvement of Field Crops, Dr. Abdul Hamid Ahmed Al-Younes, 1993, Directorate of Dar Al-Kutub for Printing and Publishing - Baghdad. 5- Cereals and Pulses Crops (Practical Part), Dr. Kamel Muhammad Al-Khafaji, University of Baghdad 2009.
	<ul> <li>Ander son w.k., and j.r. Garling. Australia. 2006.</li> <li>4- Production and Improvement of Field Crops, Dr. Abdul Hamid Ahmed Al-Younes, 1993, Directorate of Dar Al-Kutub for Printing and Publishing - Baghdad.</li> <li>5- Cereals and Pulses Crops (Practical Part), Dr. Kamel Muhammad Al-Khafaji, University of Baghdad 2009.</li> <li>6- The course vocabulary (practical) and includes the following: The characteristics of the</li> </ul>
	legume family in general and the botanical description of the bean crops, chickpeas, lentils, mung, soybeans, peas, beans and hartman.

1 0 1		
1- Course Name:		
Plant Growth Regulators		
2- Course Code:		
AFC1949		
3- Semester / Year: years , seas	on spring	
2023_2024		
4- Description Preparation Dat	2:	
25-1-2024		
5- Available Attendance Forms:		
Presence		
6- Number of Credit Hours (Tota	l) / Number of Units	
(Total)75 (5 hours weekly)		
7- Course administrator's nam	e (mention all, if more	than one name)
Name: assistant prof. Bushra Shak	er Jassim	
Email: <u>ag.bushra.shaker@uoanbar</u>	<u>edu.iq</u>	
8- Course Objectives		
Course Objectives	• Teaching students	the physiological effects
<ul> <li>Teaching students the basics of science</li> </ul>	plant growth regula	ators
related to growth	Teaching students	s the applications of us
Teaching students about the types of a		
• reaching students about the types of p	plant growth regu	lators in the field of f
growth regulators	crops	
• Teach students how to treat plants with p	Teach students	the role of plant gro
growth regulators	regulators in increa	asing crop production
	-	
0 Teaching and Learning Strate		
9- Teaching and Learning Strate	gies	
9- Teaching and Learning Strate         Strategy         A. Knowledge and Understanding	gies	
9- Teaching and Learning Strate         Strategy         A. Knowledge and Understanding         A1- Enable students to acquire knowled	gies dge of the basics of science rel	ated to
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowle development.         A2- Enable students to know the methe	gies dge of the basics of science rel	ated to
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the methologiant growth regulators	gies dge of the basics of science rel ods of controlling growth throu	ated to gh treatment with
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowle development.         A2- Enable students to know the metho plant growth regulators         A3 - Know the means and types of pla         A4- Enabling students to obtain knowl	gies dge of the basics of science rel ods of controlling growth throu at growth regulators.	ated to gh treatment with
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the meth- plant growth regulators         A3 - Know the means and types of pla A4- Enabling students to obtain knowled         A5 - Enable students to obtain knowled	gies dge of the basics of science rel ods of controlling growth throu at growth regulators. edge and understanding of the lge and understanding of ways	ated to gh treatment with plant's hormonal needs. to improve
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the methol plant growth regulators         A3 - Know the means and types of plant A4- Enabling students to obtain knowled hormonal growth.	gies dge of the basics of science rel ods of controlling growth throu at growth regulators. edge and understanding of the lge and understanding of ways	ated to gh treatment with plant's hormonal needs. to improve
9- Teaching and Learning Strate         Strategy         A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the methor plant growth regulators         A3 - Know the means and types of pla         A4- Enabling students to obtain knowled hormonal growth.	gies dge of the basics of science rel ods of controlling growth throu at growth regulators. edge and understanding of the lge and understanding of ways	ated to gh treatment with plant's hormonal needs. to improve
9- Teaching and Learning Strate         Strategy       A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the methor plant growth regulators         A3 - Know the means and types of plators         A4- Enabling students to obtain knowled hormonal growth.         10- Course Structure	gies dge of the basics of science rel ods of controlling growth throu at growth regulators. edge and understanding of the lge and understanding of ways	ated to gh treatment with plant's hormonal needs. to improve
9- Teaching and Learning Strate         Strategy         A. Knowledge and Understanding         A1- Enable students to acquire knowled development.         A2- Enable students to know the meth- plant growth regulators         A3 - Know the means and types of plat A4- Enabling students to obtain knowled hormonal growth.         10- Curse Structure         Week       Hours         Required Learning       Unit or	gies dge of the basics of science rel ods of controlling growth throu at growth regulators. edge and understanding of the lge and understanding of ways subject Learning	ated to gh treatment with plant's hormonal needs. to improve

		Outcomes	name	method	method
	E	Vnowledge		Leature	Oviale and
1	2	terminology related	arowth regulators	discussion	Quick and mon
		plant growth regula	their applications	reports.	and reports
		and their applications	anon approximiting	laboratories	und reports
		Using electronic mean		science movie	
2	5	Knowledge	Plant growth regulat	Lecture,	Quick and mon
_		terminology related	Auxins	discussion,	exams, class acti
		plant growth regula		reports,	and reports
		and their applications		laboratories	
	-	Using electronic mea		science movie	
3	5	Knowledge	Gibberellins	Lecture,	Quick and mon
		terminology related		discussion,	exams, class acti
		plant growth regula		reports,	and reports
		Using electronic mea		science movie	
1	5	Knowledge	Gibberellins	L ecture	Ouick and mon
4	5	terminology related	Gibberennis	discussion.	exams, class acti
		plant growth regula		reports,	and reports
		and their applications		laboratories	1
		Using electronic mea		science movie	
5	5	Knowledge	Get to know gibberelli	Lecture,	Quick and mon
0		terminology related		discussion,	exams, class acti
		plant growth regula		reports,	and reports
		and their applications		laboratories	
	-	Using electronic mea		science movie	
6	5	First Exim		Lecture,	Quick and mon
				discussion,	exams, class acti
				reports,	and reports
				science movie	
7	5	Knowledge	abscisic acid	Lecture	Ouick and mon
/	5	terminology related		discussion.	exams, class acti
		plant growth regula		reports,	and reports
		and their applications		laboratories	1
		Using electronic mea		science movie	
8	5	Knowledge	Other compounds that	Lecture,	Quick and mon
Ū		terminology related	as plant growth regulat	discussion,	exams, class acti
		plant growth regula		reports,	and reports
		and their applications		laboratories	
	5	Using electronic mea	E a martin	science movie	
9	5	Knowledge	Examples	Lecture,	Quick and mon
		plant growth regula	preparation and use	reports	and reports
		and their applications	different concentration	laboratories	and reports
		Using electronic mea	plant growth regulator	science movie	
10	5	Knowledge	Physiological effects	Lecture,	Ouick and mon
10		terminology related	plant growth regulat	discussion,	exams, class acti
		plant growth regula	rooting, ap	reports,	and reports
		and their applications	dominance, dormancy	laboratories	
		Using electronic mea	seeds and shoots.	science movie	
11	5	Knowledge	Vegetative grov	Lecture,	Quick and mon
		terminology related	flowering, setting	discussion,	exams, class acti
		plant growth regula	growth and developm	reports,	and reports
		and their applications	of truits	laboratories	
4.0	5	Using electronic mea	For motivity	I conture	Quials and mean
12	3	terminology related	rui manufily, ag	discussion	exame class acti
		nlant growth regula	nhenomenon of floa	reports	and reports
		and their applications	(exchange of pregnat	laboratories	and reports
	1		(exenange of pregnal	aboratories	

		Using electronic mea	تبادل	science movie
13	5		Second Exim	Lecture, Quick and mon discussion, exams, class acti reports, and reports laboratories science movie
14	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Use of growth regula in tissue culture and m propagation	Lecture,Quick and mondiscussion,exams, class actireports,and reportslaboratoriesscience movie
15	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	The foliar applica system and the interac of climatic factors: h light, humidity, rain wind	Lecture, Quick and mon discussion, exams, class acti reports, and reports laboratories science movie
11- (	Course E	Evaluation		
-Month - Evalua - Assess -Direct o -Classroo	ly exams ation of the ments on ral exams m and home	(two or more). e students' classroom activ writing research, scientific e activities	rity c reports and homewor	k
12- l	_earning	and Teaching Resour	rces	
Require	d textbool	ks (curricular books, if any	() plant growth re Khafaji .2014 Regulators of g Din Wasfi. 199 Plant Hor	gulators. Dr. Makki Alwan Al- growth and flowering. Dr. Emad El 95 rmones T. K. Davies 1995
Main ref	ferences (	(sources)	Actahort.com Ashs.org Springler	
Recommended books and references (scientific journals, reports)		ces Journal of Bioto University Diyala Journal University of D Iraqi Jo Universit	echnology Center - Al-Nahrain of Agricultural Sciences - Diyala Durnal of Agricultural Sciences by of Baghdad	
Electron	ic Refere	nces, Websites	https://ara	ab-ency.com.sy/ency/details/10085/19

	1- Course Name:	
General Pla	nt	
	2- Course Code:	
AFC1913		
	3- Semester / Year: years , se	eason spring
2023_2024		
	4- Description Preparation D	ate:
25-1-2024		
	5- Available Attendance Form	s:
Prese	ence	
	6- Number of Credit Hours (T	otal) / Number of Units
(Tota	1)75 (5 hours weekly)	
	<li>7- Course administrator's na name)</li>	ame (mention all, if more than one
Name	e: assistant prof. Bushra Shake	er Jassim
Emai	l: <u>ag.bushra.shaker@uoanbar.</u>	<u>edu.iq</u>
	8- Course Objectives	
Course Object	lives	<ul> <li>Teaching students the relationship v</li> </ul>
<ul> <li>Teachi</li> </ul>	ng students the basics of scie	physiology plant
related	l to plant	<ul> <li>Teaching students the applications of us</li> </ul>
<ul> <li>Teach</li> </ul>	ing students about the types of	plant morphology in the field of field crops
plant		• Teach students the type of plant
Teach	students how to treat plants with p	
1		
arowth	regulators	
growth	regulators	
growth	regulators	
growtł	9- Teaching and Learning Stra	ategies
growth Strategy	9- Teaching and Learning Stra A. Knowledge and	ategies
growth Strategy	<ul> <li>9- Teaching and Learning Stra</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowledge</li> </ul>	ategies
growth Strategy	9- Teaching and Learning Stra A. Knowledge and Understanding A1- Enable students to acquire knowled development.	ategies lge of the basics of science related to
growth Strategy	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowleddevelopment.</li> <li>A2- Enable students to know the method plant growth regulators</li> </ul>	ategies lge of the basics of science related to ds of controlling growth through treatment with
growth Strategy	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowledge development.</li> <li>A2- Enable students to know the methor plant growth regulators</li> <li>A3 - Know the means and types of plant</li> </ul>	ategies lge of the basics of science related to ds of controlling growth through treatment with t growth regulators.
growth Strategy	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowleddevelopment.</li> <li>A2- Enable students to know the method plant growth regulators</li> <li>A3 - Know the means and types of plant</li> <li>A4- Enabling students to obtain knowledde</li> <li>A5 - Enable students to obtain knowledde</li> </ul>	ategies lge of the basics of science related to ds of controlling growth through treatment with t growth regulators. dge and understanding of the plant's hormonal needs.
growth Strategy	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowled development.</li> <li>A2- Enable students to know the method plant growth regulators</li> <li>A3 - Know the means and types of plant</li> <li>A4- Enabling students to obtain knowled hormonal growth.</li> </ul>	ategies lge of the basics of science related to ds of controlling growth through treatment with t growth regulators. edge and understanding of the plant's hormonal needs. ge and understanding of ways to improve
growth Strategy	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowledge development.</li> <li>A2- Enable students to know the methor plant growth regulators</li> <li>A3 - Know the means and types of plant</li> <li>A4- Enabling students to obtain knowled hormonal growth.</li> </ul>	Ategies lge of the basics of science related to ds of controlling growth through treatment with t growth regulators. edge and understanding of the plant's hormonal needs. ge and understanding of ways to improve
growth Strategy 10- Course	<ul> <li>9- Teaching and Learning Strate</li> <li>A. Knowledge and Understanding</li> <li>A1- Enable students to acquire knowleddevelopment.</li> <li>A2- Enable students to know the method plant growth regulators</li> <li>A3 - Know the means and types of plant</li> <li>A4- Enabling students to obtain knowledded</li> <li>A5 - Enable students to obtain knowledded</li> </ul>	ategies lge of the basics of science related to ds of controlling growth through treatment with t growth regulators. edge and understanding of the plant's hormonal needs. ge and understanding of ways to improve

Week	Houre	Required Learning	Unit or subject	Learning	Evaluation
WEEK	nours		onit of subject		Evaluation
		Outcomes	name	method	method
1	5	Knowledge terminology related plant growth regula and their applications Using electronic mear	plant cell	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
2	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	ی Prokaryotic and eukaryotic cell	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
3	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Cell wall mitochondria, chloroplast	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
4	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Plant structure growth, development	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
5	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Root and modified root	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
6	5	First Exim	Exim	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
7	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Stem and modifie stem	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
8	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Leaves and modified leaves	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
9	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Tissue systems three	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
10	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Xylem, phloem	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
11	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Parenchyma cholenchyma, sclerenchyma	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
12	5	Knowledge terminology related plant growth regula	Cell cycle	Lecture, discussion, reports,	Quick and mon exams, class acti and reports

		and their applications			laboratories			
	-	Using electronic mea			science movie	0.11	1	
13	5		Second	Exim	Lecture, discussion, reports, laboratories	Quick a exams, o and repor	and class ts	mon acti
					science movie			
14	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	Transport in vascular	plant	Lecture, discussion, reports, laboratories science movie	Quick a exams, o and repor	and class ts	mon acti
15	5	Knowledge	photosynthes	sis=	Lecture,	Quick a	and	mon
10		terminology related		Cellular	discussion,	exams, o	class	acti
		plant growth regula	respirat	ion	reports,	and repor	ts	
		Using electronic mea			science movie			
11- (	Course I	Evaluation			<b>I</b>			
Quick d -Month - Evalua - Assess -Direct o -Classroo	aily exam ly exams ation of th ments on oral exams m and hom	is. (two or more). e students' classroom ac writing research, scient e activities	etivity ific reports an	d homewo	rk			
12-	_earning	and Teaching Reso	ources					
Require	d textboo	ks (curricular books, if a	any)	General Botany				
Main ref	ferences	(sources)		Botany				
Recomm	nended	books and refer	rences	Journa	l of botany			
(scientif	ic journals	s, reports)						
Electron	Electronic References, Websites			https://www.barnesandnoble.com/b/books/biology-life-sciences/botany//N-29Z8q8Z18ca				

1-	Course	Name:

#### **Principle of Molecular Genetics**

#### 2- Course Code:

#### AFC1946

3- Semester / Year:

Fall season 2023-2024

#### 4- Description Preparation Date:

#### 25-1-2024

5- Available Attendance Forms:

- Electronic Classes and
- Classrooms
- 6- Number of Credit Hours (Total) / Number of Units (Total)

(Total)75 (5 hours weekly)

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

Name: Dr Mohammed Hamdan Al-Issawi

Email: ag.mohammed.hamdan@uoanbar.edu.iq

#### 8- Course Objectives

**Course Objectives** 

Strategy

# 1- Increase students' knowledge about the nature genetic materials and its structure and how to expressed inside cells

2- Increase students' knowledge about the technique based on PCR

### 9- Teaching and Learning Strategies

# • Providing students with theoretical and practical scientific knowledge on the subject of molecular genetics

- The ability of understanding the structure of DNA and RNA
- The ability using molecular techniques using PCR.

10- Cou	rse Stru	cture					
Week	Hours	Required	Unit or subject	Learning method	Evaluation method		
		Learning	name				
----	---	--	---	-------------------------	-------	--------	------
		Outcomes					
1	2	Molecular genetics Introduction	Introduction about molecular genetics and the developme of this science	Lectures			Exam
2	2	Molecular genetic Applications	Explaining application molecular geneti	Lectures			Exam
3	2	Experiments: Pr of Genetic mate (DNA) -1	Explaining experiments t proved DNA is genetic materials	theoretical lectures	and p	oracti	Exam
4	2	Experiments: Pr of Genetic mate (DNA) -2	Explaining experiments t proved DNA is genetic materials	theoretical lectures	and p	oracti	Exam
5	2	DNA and R Structure -1	The structure nucleic acids and unique structure	theoretical lectures	and p	oracti	Exam
6	2	DNA and R structure – 2	The structure nucleic acids and unique structure	theoretical lectures	and p	oracti	Exam
7	2	Gene Expression	To exploit the gen information and h gene is expres inside cells	theoretical lectures	and p	oracti	Exam
8	2	Gene Express Regulation	Focus on regulation of the g expression which controlled by cells	theoretical lectures	and p	oracti	Exam
9	2	Genetic Code	Explain the reading the genetic codes	theoretical lectures	and p	oracti	Exam
10	2	Protein Synthesis	The product of g expression proteins	theoretical lectures	and p	oracti	Exam
11	2	DNA replication	DNA replicat during cell division	theoretical lectures	and p	oracti	Exam
12	2	Genetic Mutation	Explain the chan in gene or nitrog base which leads changes in ge expression	theoretical lectures	and p	oracti	Exam
13	2	Genetic Mutation	Explain the changes in gene or nitrogene or	theoretical lectures	and p	oracti	Exam

14	2	Extranuclear DN	Focus on the genet naterial outside nucleus such as nitochondria and hloroplasts	Exam	
15	2	Epigenetics	Epigenetic explain ome traits which theoretical and practi annot be explaine lectures by genetics	Exam	
11- Co	ourse Ev	aluation			
Term Tes Lab: 10 Quizzes: 1 Project: 1 Final: 50 12- Le	Term Tests: 15 Lab: 10 Quizzes: 15 Project: 10 Final: 50				
Required any)	textbook	s (curricular bo	ks, Course books Other		
Main refer	ences (sc	ources)	Zahra M Alkhafaji and Hassan M Abu Primer Design. University of Baghdad, E	ı-Almaali. 2013. PCRing a 3aghdad. P, 304.	
Recommended books and references (scientific journals, reports)			Mahmood M. Refaat and Saad B. Alo Biotechnology. The General Egyptian Books and Documents,	utabi. 2008. Introduction Association of Internatic	
Electronic	Referenc	es, Websites	https://www.bankofbiology.com basis-of-inheritance.html#goog	n/2018/08/molecul le vignette	

1- Course Name:

**Principle of Statisitcs** 

#### 2- Course Code:

#### AFC19220

3- Semester / Year:

Spring season 2023-2024

#### 4- Description Preparation Date:

#### 25-1-2024

#### 5- Available Attendance Forms:

- Electronic Classes and
- Classrooms

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

(Total)75 (5 hours weekly)

7- Course administrator's name (mention all, if more than one name) Name: Dr Mohammed Hamdan Al-Issawi

Email: ag.mohammed.hamdan@uoanbar.edu.iq

#### 8- Course Objectives

Course Objectiv	es Introducing students to the importance and functions statistics.
	<b>Training</b> students to apply statistics in their field specialization.
	<ul> <li>Enable the student to follow the scientific method collecting, classifying, summarizing, and displaying dat a clear way, and finding statistical measures for the data.</li> <li>Enable the student to formulate hypotheses, test them make comparisons</li> <li>Enable the student to make plans and follow the corr steps in order to reach appropriate conclusions decisions</li> </ul>
9- Tea	ching and Learning Strategies
Strategy	<ul> <li>Providing students with theoretical and practical scientific knowledge on the subject of statistics</li> <li>The ability to collect and classify data</li> </ul>
	• The ability to measure the degree of relationship between variables.

Neek	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	Introduction Statistics	Definition of statistics, uses of statistics, its division the nature and division of data, variables and their division	Lectures	Exam
2	2	Statistical symbols	Read statistical symbols and understand function written in statistica symbols	Lectures	Exam
3	2	Data collect and tabular presentation	Data collection, Frequency distributions, Frequency distribution table, Creating a frequency table, Class length, Class center, True limits Relative	theoretical and practicle lectures	Exam
4	2	Graphic representation	Graph of Frequenc Distributions with Histogram, Polygo and Frequency Cur	theoretical and practice lectures	Exam
5	2	Measures of Central Tendency	Arithmetic mean, median, and mode	theoretical and practic lectures	Exam
6	2	Measures of Dispersion o Variation	Range, mean deviation, variance standard deviation, and coefficient of variation	theoretical and practiclectures	Exam
7	2	Correlation coefficient	Simple correlation, the relationship between two independent variables, the correlation significance test	theoretical and practiclectures	Exam
8	2	Regression coefficient	Simple linear regression, finding the relationship between two variables one	theoretical and practiclectures	Exam

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			independent and th other dependent, predicting the value of the dependent variable in terms of			
9	2	Principles o probability theory	Permutations and combinations	theoretical and pract lectures	Exam	
10	2	Discrete Probability Distribution	binomial distribution	theoretical and pract lectures	Exam	
11	2	Continuous Probability Distribution	Normal distribution standard normal distribution curve	theoretical and pract lectures	Exam	
12	2	Continuous Probability Distribution	Areas under the normal distribution curve, applications	theoretical and pract lectures	Exam	
13	2	Chi-square 1	Independence, consent	theoretical and pract lectures	Exam	
14	2	Hypothesis testing	Hypothesis formulation and testing, null hypothesis and alternative hypothesis, probability level, T test, Z-test	theoretical and pract lectures	Exam	
15	2	Analysis Variance	Variance analysis table	theoretical and pract lectures	Exam	
11- Co	ourse Eva	luation			L	
Term Tes Lab: 20 Quizzes: 1 Project: 5 Final: 50 12- Le	ts: 15 10 arning an	d Teaching Reso	Durces			
Required t	textbooks (	curricular books, if	any) Course book	Course books		
Main references (sources)			The book (Int Khasha Mahr Forestry / Uni	The book (Introduction to Statistics), written by Dr. Khasha Mahmoud Al-Rawi, College of Agriculture and Forestry / University of Mosul, 1989.		
Recommended books and references (scientific journals, reports)			nces Medical, Ahn Statistics, Am <u>www.daralbe</u> David, M. La	Medical, Ahmed Abdel Samie. 2007. Principles of Statistics, Amman. The starting house. RA: (6/17/2007) <u>www.daralbedayah.com</u> . David, M. Lane, Introduction to Statistics. Online Edition		
Electronic	References	s, Websites	https://www.scrib	br.com/methodology/experimer	ntal-design/	

1.	Course	Name:
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#### Cereal crops.

2. Course Code:

#### AFC1938

3. Semester / Year:

Spring 2023-2024.

#### 4. Description Preparation Date:

25-1-2024

Strategy

5. Available Attendance Forms:

The audience.

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

5 units (2 theoretical +3 practical).

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

Name:Dr. Muaiad Hadi + Dr. Omer Ismail . Email: ag.moaead.hadei@uoanbar.edu.ig

8. Course Objectives

# Course Objectives1-Study of the most important cereal crops in the world.<br/>2-It includes knowing the spread of each crop in different regions of the world.<br/>3-Knowing the economic importance of grain crops.<br/>4- Identify the methods of growing each crop and the factors affecting the<br/>productivity of each crop.

#### 9. Teaching and Learning Strategies

#### 1-Explanation and clarification.

- 2- The method of the lecture.
- 3- Student groups.
- 4- Practical lessons in agricultural fields.
- 5- Scientific trips to learn about the most important ceareal crops grown in Iraq.
- 6- The method of self-learning.

### 10. Course Structure

Week	Hou	Required Learning	Unit or	Learning method	Evaluation
	rs	Outcomes	subject		method
			name		

	-				
1	5	Economic importance - production centers	Cereal crops	botanical division of cereal crops,	Conducting d and monthly t through quest about the subjec determine t comprehension
2	5	Wheat - economic importance - production centers - the original home.	Cereal crops	Botanical description - germination.	II
3	5	Stages of growth of wheat - division of wheat - nutritional value - distribution in Iraq - varieties.	Cereal crops	Climatic conditions - botanical description.	=
4	5	Irrigation - lying - ripening - harvesting - threshing - productivity - storage - raising and improving wheat - stages of flour production.	Cereal crops	. Climatic conditions - botanical description	=
5	5	Barley division - distribution in Iraq - varieties.	Cereal crops	Agricultural cycle - service operations and land preparation - fertilization - irrigation.	=
6	5	Maturity - harvest - threshing - storage - productivity - cultivation methods.	Cereal crops	Barley pests - diseases - insects - bush.	=
7	5	Rice - economic importance - production centers - the original home.	Cereal crops	Climatic conditions - botanical description.	=

8	5	Growth stages of rice - totals of rice in the world - rice division - nutritional value - distribution in Iraq - varieties.	Cereal crops	The location of rice in the cultivation cycle - soil - planting date - planting methods - quantity of seeds.	=
9	5	Ripeness - harvesting - threshing - drying - productivity - flocculation and its stages - rice flour - culinary quality characteristics.	Cereal crops	Fertilization - Irrigation - Pests - Diseases - Insects - Bush.	=
10	5	corn - economic importance - chemical composition of the yellow corn kernel	Cereal crops	Botanical description - varieties - soil and crop service operations.	=
11	5	Corn Fur Geographical Distribution - History - Origin. The right conditions to increase the yield of maize.	Cereal crops	Climatic conditions - botanical description - varieties - soil and crop service operations - pests and their resistance	=
12	5	White corn - economic importance - origin - types of corn - distribution in Iraq - maturity - harvest and threshing.	Cereal crops	Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance	=
13	5	Millet - economic importance - production centers - origin - types of millet - maturity - harvest - productivity – quality	Cereal crops	Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance	=
14	5	Oats - economic importance - production centers - origin - types of oats - maturity - harvest - productivity - quality.	Cereal crops	Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance.	=
15	5	Maturity - harvest - method of breeding and improvement.	Cereal crops	Climatic conditions - botanical description.	=

#### 11. Course Evaluation

-1Daily exams with self-solved questions.

-2Participation marks for competitive and discussion questions related to the academic subject.

3- Specific grades for homework assignments and quick and surprise exams.

#### 12. Learning and Teaching Resources

Required	-Wheat cultivation and production techniques / Jamal Al-Shibiny. The first edition. The
Textbooks	-The Scientific Book on Cereal Manufacturing / Abbas Hassan Hussein. first edition.
(curricular books,	University of Baghdad 2009. -Field crop production, Dr. Salah El-Din Abdel-Razzaq Shafshak and d. Abdel Hamid Al-
if any)	<ul> <li>Sayed Al-Dababi, 2008, Dar Al-Fikr Al-Arabi, Egypt.</li> <li>Production of field crops / Dr. Abdul Majeed Al-Ansari, University of Baghdad 1981</li> <li>Crops of Cereals and Pulses (Practical Part), Dr. Kamel Muhammad Al-Khafaji, Universi of Baghdad 2009.</li> <li>Scientific bases for management, production and improvement of field crops. Mr. Dr. Iy Hussein Al-Muaini and Prof. Muhammad Awaid Ghadeer Al-Obaidi. College of Agriculture University of Anbar, 2018.</li> <li>Producing and improving field crops (Part One). Abdul Hamid Ahmed Al-Younes, University of Baghdad - College of Agriculture, 1993.</li> <li>Grain production. Mr. Dr. Abdel Hamid Mohamed Hassanein, Faculty of Agriculture - Al-Azhar University, Arab Republic of Egypt 2019.</li> <li>Principles of field crop production. Dr Muhammad Hazal Kazem Al-Baldawi and d. Alad Abdul Maieed Al-Iubouri and d. Conciliator Abdul Razzao Suhail Al-Naqib. College of</li> </ul>
	Agriculture - University of Baghdad, 2014
Main references (sources)	
Recommended books and	
references (scientific	
journals, reports)	
Electronic Referen	- Lectures and statistics from the cluster network.
Websites	

1- Course Name:

Plant Physiology

2- Course Code:

AFC1942

3- Semester / Year: Semester

2023\_2024

4.Description Preparation Date:-

25-1-2024

5. Available Attendance Forms:

In person classes

6.Number of Credit Hours (Total) 5 / Number of Units (Total) 3.5

5 units (2 theoretical +3 practical).

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

Name: Assist.prof. Imad Mahmood Ali+ yaseen Abd Ahmed

Email: ag.imad.mahmood@uoanbar.edu.iq

Email : ag.yaseen.abd@uoanbar.edu.iq

8.Course Objectives: This course introduces Introducing students to the types of plant

cells, their components, and the function of each component, Identify the types of plant carrier vessels, their parts and functions. Learn about the biological processes that occur in the plant cell (transpiration, cellular respiration, photosynthesis). Learn about some physiological concepts and plant hormones.

9. Teaching and Learning Strategies :

1-Understand the nature of the work of agricultural vocabulary.

- 2 Distinguish between each of the types of cultivation and treatment methods.
- 3- Distinguishing between three terms (land, marketing, and ultimate beneficiary)

10. Course Structure :

- Training the student on how to use information sources to maintain and develop his basic information.
- Develop the student's style of transferring information to the work environment.

Training the student to conduct scientific research to solve problems at work and develop its methods

#### 11.

The wee k	Hours	Required learning outcomes	<u>Unit/course or topic</u> <u>name</u>	education method	Evaluatio n Method
1	5(2+3)	Definition of physiology and its importance	Microscope: Getting to know its parts, how to deal with it, how to prepare glass slides By watching a video	An introduction to plant physiology with a historical view	Discussion, daily exams, monthly exams
2	5(2+3)	The plant cell, its structure and functions	Recognizing the cell wall, the nucleus, the protoplasm Recognizing the components of the cell within e-learning videos	The plant cell, its types, a study of the cell of higher plants, the cell wall, the middle lamina, the primary wall, the secondary wall, the pit, and the plasmonic bonds.	Discussion, daily exams, monthly exams
3	5(2+3)	dentify the plastids (green, colored, colorless). And the anthocyanin pigment in the cell juice, via video	Living contents of a plant cell: cytoplasm, mitochondria, ribosomes, Golgi apparatus, plastids, spheroids, microtubules, cell membranes.	Living organelles in the cytoplasm	Discussion, daily exams, monthly exams
4	5(2+3)	View samples of crystals (pink, stellate, suspended)	The non-living contents of a plant cell. Vacuoles, cellular juice, crystals and their types, starchy granules, iron granules.	Non-living bodies in a cell	Discussion, daily exams, monthly exams
5	5(2+3)	Do an experiment at home to identify the carriers with materials available at home	Carrier vessels - wood, phloem, their parts and functions	Wood texture and phloem texture	Discussion, daily exams, monthly exams
6	5(2 +3)	Do an experiment at home that shows how water rises through wood vessels to the plant organs	The process of water absorption and theories of its rise	Mechanisms of plant water absorption	Discussion, daily exams, monthly exams
		first month	n exam		
7	5(2+3)	Making a pot experiment, the students were able to watch the water leaving the plant through the process of transpiration.	The process of removing excess water through the transpiration process	Transpiratio n and its types	Discussion, daily exams, monthly exams
8	5(2+3)	To identify the internal structure of the leaf, the upper epidermis, the mesophyll, the lower epidermis, the vessels (veins) of a dicotyledonous	Theories of water loss through stomata and the mechanics that determine the opening and closing process	Interpretatio n of water loss theories	Discussion, daily exams, monthly exams

		plant (ready slice offlex)				
10	5(2+3)	Through e-learning platforms, to identify the structure of the leaf of a monocotyledonous plant, Identifying wood texture, vascular cell wall clots and its types, bronchioles, fibers, wood parenchyma (with pictures via e-learning)	Theories that study the processes of absorption of salts and their path within the different plant organs	How does a plant deal with salt?	Discussion, daily exams, monthly exams	
11	5(2+3)	To identify the occurrence of the plasmolysis process of the plant cell and what are the mechanisms that the plant has to withstand salt stress (with pictures)	The importance of these salts and the effect of increasing or decreasing them.	types of salts	Discussion, daily exams, monthly exams	
12	5(2+3)	Learn about the internal structure of the mitochondria (with pictures and videos)	The process of breathing and how, stages and places it occurs inside the plant	respiration and energy production	Discussion, daily exams, monthly exams	
13	5(2 +3)	Identify the chloroplasts and their components, and where the light and dark reactions occur (with pictures)	The process of photosynthesis with all its different stages, places of occurrence and its products. ?	Learn about C3 and C4 plants	Discussion, daily exams, monthly exams	
14	5(2+3)	Identification of phloem tissue, sieve tubes, companion cells, phloem fibers, phloem parenchyma (with pictures).	Phloem transport and how to transfer the mature sap to the plant parts	Short term transportatio n and long term transportatio n	Discussion, daily exams, monthly exams	
15	5(2 +3)	Conducting a germination experiment for some crop seeds with dishes inside the house and teaching the student how to calculate the percentage of germination. And learn about the types of hibernation that affect seeds and how to break hibernation	The phenomenon of vegetative hibernation and its importance	What is hibernation and its types?	Discussion, daily exams, monthly exams	
	second month exam					

12. Infrastructure	
Required readings: • Course Books • other.	<ol> <li>Basics of Plant Physiology (three parts) 1991, written by Dr. Abdel-Azim Kazem Muhammad and Dr. Muayyad Ahmed Al- Younis, Press of the Ministry of Higher Education and Scientific Research, Baghdad - Iraq.</li> <li>Basics of plant physiology. 2001. Written by Dr. Bassam Taha Yassin, Qatar University Arabization Committee</li> </ol>

<ul><li>3 - Introduction to Plant Physiology, 2010.</li><li>Fourth Edition. William G. Hopkins and Norman</li><li>P. A. Huner. The University of Western Ontario.</li></ul>
4- Bewley, J. D., Bradford, K., & Hilhorst, H. (2012). Seeds: physiology of development, germination and dormancy. Springer Science & Business Media.

1- Course Name:
Drugs Plants
2- Course Code:
AFC1941
3- Semester / Year:
First semester 2023_2024
4- Description Preparation Date:
25-1-2024
5- Available Attendance Forms:
Weekly
6- Number of Credit Hours (Total) / Number of Units (Total)
Five hours a week
3.5 units
7- Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Osama Hussein Mahidi
Email: ag.osama.hussein@uoanbar.edu.iq
8- Course Objectives
Identifying medicinal plants, their divisions, sources, the nature of their active compounds, and method extracting them
9- Teaching and Learning Strategies
Strategy       1- Lecture and presentation         2- Discussion         3- Presentation of academic problems         4- Finding appropriate solutions 5- Brainstorming         6- Collaborative style         7

#### **10. Course Structure** Required learning Unit/course or topic the week **Evaluation** education hours outcomes name method method 5(2+3) Students' knowledge of Introduction to 2-hour the first Discussion, daily the importance of medicinal plants theoretical exams, monthly medicinal plants, their lectures and exams history and the 3-hour development of their laboratory cultivation per week

The second	5(2+3)	Statement of the importance of developing the cultivation of medicinal plants within the global trend of growing medicinal plants	Classifications of morphological, medicinal, chemical, botanical and seasonal medicinal plants	2-hour theoretical lectures and 3-hour laboratory per week	Discussion, daily exams, monthly exams
the third	5(2+3)	Learn how to study these plants and their classifications	Study the most important scientific interests that are a start in the development of the study of medicinal plants	2-hour theoretical lectures and 3-hour laboratory per week	Discussion, daily exams, monthly exams
the fourth	5(2+3)	Students' knowledge of the importance of agricultural processes in the production of medicinal plants	Agricultural operations and plant service operations aimed at increasing production	2-hour theoretical lectures and 3-hour laboratory per week	Discussion, daily exams, monthly exams
Fifth	5(2+3)	Students' knowledge of the importance of environmental factors and their impact on plants	Environmental factors, including heat, water, light, etc	2-hour theoretical lectures and 3-hour laboratory per week	Discussion, daily exams, monthly exams
	5(2 +3)	Students' knowledge of the importance of the impact of environmental factors on plants	Environmental factors, including soil and its microorganisms	2-hour theoretical lectures and 3-hour laboratory per week	Discussion, daily exams, monthly exams
		first mo	onth exam		
	5(2+3)	Students' knowledge of secondary metabolites	Alkaloids: their composition, composition, effects and chemical extraction methods	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
Ninth	5(2+3)	Students' knowledge of secondary metabolites	Glycosides: their structure, composition, effects and chemical extraction methods	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
The tenth	5(2+3)	Students' knowledge of secondary metabolites	Volatile oils: their composition, composition, effects and chemical extraction methods	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
Eleventh	5(2+3)	Students' knowledge of secondary metabolites	Tannins: their composition, composition, effects, and methods of chemical extraction	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams

	Twelveth	5(2+3)	Students' knowle secondary metal	edge of bolites	Phenols: their composition, composition, effects and chemical extraction methods	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
	Thirteenth	5(2+3)	Botanical descrip some medicinal and their econo importance	otion of plants omic e	Plants of the family Oral and Solanaceous family	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
	fourteenth	5(2+3)	Botanical descrip some medicinal and their econo importance	otion of plants omic e	The labial family, the sappy family, the legume family, and the grassy family	2-hour theoretical lectures and 3- hour laboratory per week	Discussion, daily exams, monthly exams
	Fifteenth		seco	nd m	onth exam		
	11. Course	Evaluatic	n				
Dis pre	stributing the eparation, daily	score out y oral, mo	of 100 accord nthly, or writte	ling to en exan	the tasks assigned to t ns, reports etc	the studen	t such as daily
	12.Learning	and Tea	ching Resour	rces			
Re	Required textbooks (curricular books, if any Muhammad Iraqi Medicinal and aromatic plants and their medicinal uses, D Omran					2015, Dr. Faisal edicinal uses, Dr. A	
Main references (sources)							
Re	Recommended books and references						
(sc	ientific journals	, reports	.)				
(scientific journais, reports)							

1. Course Name:

**Cereal crops.** 

2. Course Code:

#### AFC1938

3. Semester / Year:

Spring 2023-2024.

4. Description Preparation Date:

25-1-2024.

5. Available Attendance Forms:

The audience.

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

5 units (2 theoretical +3 practical).

#### 7. Course administrator's name (mention all, if more than one name) Name:Dr. Muaiad Hadi + Dr. Omer Ismail . Email: ag.moaead.hadei@uoanbar.edu.ig

#### 8. Course Objectives

# Course Objectives1-Study of the most important cereal crops in the world.<br/>2-It includes knowing the spread of each crop in different regions of the world.<br/>3-Knowing the economic importance of grain crops.<br/>4- Identify the methods of growing each crop and the factors affecting the<br/>productivity of each crop.

#### 9. Teaching and Learning Strategies

1-Explanation and	d clarification.

- 2- The method of the lecture.
- 3- Student groups.
- 4- Practical lessons in agricultural fields.
- 5- Scientific trips to learn about the most important ceareal crops grown in Iraq.
- 6- The method of self-learning.

#### 10. Course Structure

Strategy

Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Economic importance - production centers	Cereal crops	botanical division of cereal crops,	Conducting d and monthly t through quest about the subjec determine t comprehension

2	5	Wheat - economic importance - production centers - the original home.	Cereal crops	Botanical description - germination.	=
3	5	Stages of growth of wheat - division of wheat - nutritional value - distribution in Iraq - varieties.	Cereal crops	Climatic conditions - botanical description.	=
4	5	Irrigation - lying - ripening - harvesting - threshing - productivity - storage - raising and improving wheat - stages of flour production.	Cereal crops	. Climatic conditions - botanical description	=
5	5	Barley division - distribution in Iraq - varieties.	Cereal crops	Agricultural cycle - service operations and land preparation - fertilization - irrigation.	П
6	5	Maturity - harvest - threshing - storage - productivity - cultivation methods.	Cereal crops	Barley pests - diseases - insects - bush.	=
7	5	Rice - economic importance - production centers - the original home.	Cereal crops	Climatic conditions - botanical description.	=
8	5	Growth stages of rice - totals of rice in the world - rice division - nutritional value - distribution in Iraq - varieties.	Cereal crops	The location of rice in the cultivation cycle - soil - planting date - planting methods - quantity of seeds.	=

9	5	Ripeness - harvesting - threshing - drying - productivity - flocculation and its stages - rice flour - culinary quality characteristics.	Cereal crops	Fertilization - Irrigation - Pests - Diseases - Insects - Bush.	=
10	5	corn - economic importance - chemical composition of the yellow corn kernel	Cereal crops	Botanical description - varieties - soil and crop service operations.	=
11	5	Corn Fur Geographical Distribution - History - Origin. The right conditions to	Cereal crops	Climatic conditions - botanical description - varieties - soil and crop service operations - pests	=
12	5	White corn - economic importance - origin - types of corn - distribution in Iraq - maturity - harvest and threshing.	Cereal crops	and their resistance Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance	=
13	5	Millet - economic importance - production centers - origin - types of millet - maturity - harvest - productivity - quality	Cereal crops	Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance	=
14	5	Oats - economic importance - production centers - origin - types of oats - maturity - harvest - productivity - quality.	Cereal crops	Climatic conditions - agricultural cycle - botanical description - varieties - soil and crop service operations - pests and their resistance.	=
15	5	Maturity - harvest - method of breeding and improvement.	Cereal crops	Climatic conditions - botanical description.	=
11. -1Dai -2Pa subje 3- Sp	Cours ly exam rticipati ect. ecific gra	improvement. <b>Exaluation</b> s with self-solved questions. on marks for competitive and ades for homework assignmen	discussion o	questions related to the acade	emic

12. Learning and	Teaching Resources					
Required	-Wheat cultivation and production techniques / Jamal Al-Shibiny. The first edition. The Egyptian Library 2009					
Textbooks	-The Scientific Book on Cereal Manufacturing / Abbas Hassan Hussein. first edition.					
(curricular books,	-Field crop production, Dr. Salah El-Din Abdel-Razzaq Shafshak and d. Abdel Hamid Al-					
if any)	Sayed Al-Dababi, 2008, Dar Al-Fikr Al-Arabi, Egypt. - Production of field crops / Dr. Abdul Majeed Al-Ansari, University of Baghdad 1981 - Crops of Cereals and Pulses (Practical Part), Dr. Kamel Muhammad Al-Khafaji, Universi					
	of Baghdad 2009. - Scientific bases for management, production and improvement of field crops. Mr. Dr. Iy Hussein Al-Muaini and Prof. Muhammad Awaid Ghadeer Al-Obaidi. College of Agriculture University of Anbar, 2018. - Producing and improving field crops (Part One). Abdul Hamid Ahmed Al-Younes, University of Baghdad - College of Agriculture, 1993. - Grain production. Mr. Dr. Abdel Hamid Mohamed Hassanein, Faculty of Agriculture - Al-					
	Azhar University, Arab Republic of Egypt 2019. -Principles of field crop production. Dr Muhammad Hazal Kazem Al-Baldawi and d. Alad Abdul Majeed Al-Jubouri and d. Conciliator Abdul Razzaq Suhail Al-Naqib. College of Agriculture - University of Baghdad, 2014					
Main references (sources)						
Recommended books and						
references (scientific						
journals, reports)						
Electronic Referen	- Lectures and statistics from the cluster network.					
Websites						

1. Course Name:

Soil fertility and fertilizers

2. Course Code:

AFC1931

3. Semester / Year:

Semester 2023\_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

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

65 hours / 3.5 units

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

Name: Waqas Mahmood Abdulateef

Email: ag.waqas.mahmood@uoanbar.edu.iq

8. Course Objectives

1. Understanding the principles of soil fertility a 4. Knowing how much, when and h knowing the extent of the plant's need for vari to add these nutrients and in w nutrients and its relationship to plant productivity. form (chemical or organic). 5. Calculating the economic feasibi 2. The extent of the importance of plant nutrients, forms in which they are found, and the factors affect and cost of added fertilizers, al their readiness for the plant. with raising awareness ab 3. Assessing the fertility state of the soil and identifying reducing the amount of th symptoms of deficiency of various nutrients that app fertilizers added without affecting on the plant. vield. 9. Teaching and Learning Strategies Strategy 1. Traditional means of explanation and clarification. 2. Electronic means of explanation and clarification. **3. Field experiments.** 4. Field visits to agricultural fields. 5. Adopting student groups to conduct separate field experiments. 6. Use of various laboratory devices and equipment. 7. Displaying illustrative pictures of the various manifestations of symptoms of element deficiency on plants. 10. Course Structure

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

The first	5	Definition of growth a factors affecting it methods used fertility evaluation.	Soil fertility and fertilizers	A lecture w explanation and clarification	The exam
the second		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
the third		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
the fourth		The necessary eleme for plant growth a their classification + foundations that rely them: implementing field experiment potting experiment evaluate soil fertility	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
Fifth		Nitrogen + Estimat the ready quantities of number of macro a micro nutrients	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
VI	F	First month exam - theo	pretical and praction	cal	
Seventh		Phosphorus Estimating the rea quantities of a num of macro and mi nutrients	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
VIII		Potassium Estimating the rea quantities of a num of macro and mi nutrients	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
Ninth		Calcium, magnesiu and sulfur + estimat the ready quantities of number of macro- a micro-nutrients,	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
The tenth		Micronutrients	Soil fertility a fertilizers	A lecture w explanation and clarification	The exam
alovanth		Beneficial nutrients	Soil fertility a	A lecture w	The exam

	,	6	
		fertilizers	explanation
			allu clarification
twolvoth	Organic matter in	Soil fortility	A lecture w The evam
twervetii	soil and its importat	fertilizers	explanation
	in fertility + Estimat	ier emzer 5	and
	of the organic matter		clarification
	the soil		
Thirteenth	Second month exam - tl	neoretical and pra	ctical
fourteenth	Soil fertility evaluati	Soil fertility a	A lecture w The exam
	methods for estimat	fertilizers	explanation
	fertility status		and
			clarification
Fifteenth	Soil fertility evaluati	Soil fertility a	A lecture w The exam
	methods for estimat	fertilizers	explanation
	fertility status		and
			clarification
11. Course E	valuation		
1- Rapid daily tests	S.		
2- Theoretical tests	3.		
3- Practical tests.			
4- Research and re	ports.		
12. Learning	and Teaching Resources		
Required textbooks	s (curricular books if any)	1-Al-Naim	i, Saadallah. 1999 Fertiliz
		and soil	fertility. Ministry of Hig
		Education	and Scientific Resear
		University	of Mosul.
		-2 Awad	, Kazem Mashhout 1
		Fertilizatio	n and Soil Fertility, Ministry
		Higher Edu	ication and Scientific Resear
		University	of Basra.
		3 - Havlin	n, J.L., Itsdale, S.L., Nels
		w.L., and	Dealoii, J.D. 2003, Soli Ferti vers 5th edition USA
			Kazem Mashhout 10
iviain references (s	ources)	I-Awau, Fertilizatio	n and Soil Fertility Ministry
		Higher Edu	ication and Scientific Resear
		University	season and perentine redeal
			of Basra.
		2 - Page. A	of Basra. .L. et. Al. 1982. Methods of s
		2 - Page, A analvisi.	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical a
		2 - Page, A analyisi, microbiolo	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical s gical properties. Madison
Recommended h	ooks and references (sci	2 - Page, A analyisi, microbiolo entific 1- Al-Ar	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical s gical properties. Madison ni, Abdullah Najm, 19
Recommended b	ooks and references (sci	2 - Page, A analyisi, microbiolo entific 1- Al-Ar Principles of	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical a gical properties. Madison hi, Abdullah Najm, 19 of Soil Science, Ministry
Recommended b	books and references (sci	2 - Page, A analyisi, microbiolo entific 1- Al-Ar Principles o Higher edu	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical s gical properties. Madison ni, Abdullah Najm, 19 of Soil Science, Ministry cation and scientific research
Recommended b journals, reports	books and references (sci	entific 1- Al-Ar Principles of Higher edu 2- White,	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical a gical properties. Madison hi, Abdullah Najm, 19 of Soil Science, Ministry cation and scientific research R.E, 1979, Introduction to
Recommended b journals, reports	books and references (sci	entific 1- Al-Ar Principles of Higher edu 2- White, principles	of Basra. .L. et. Al. 1982, Methods of a part 2 2nd Chemical a gical properties. Madison ni, Abdullah Najm, 19 of Soil Science, Ministry cation and scientific research R.E, 1979, Introduction to and practices of soil scier
Recommended b journals, reports	books and references (sci )	2 - Page, A analyisi, microbiolo entific 1- Al-Ar Principles of Higher edu 2- White, principles BlackWell	of Basra. .L. et. Al. 1982, Methods of s part 2 2nd Chemical a gical properties. Madison hi, Abdullah Najm, 19 of Soil Science, Ministry cation and scientific research R.E, 1979, Introduction to and practices of soil scier scientific publication
Recommended b	books and references (sci	2 - Page, A analyisi, microbiolo entific 1- Al-Ar Principles of Higher edu 2- White, principles BlackWell 3- Page, A	of Basra. .L. et. Al. 1982, Methods of a part 2 2nd Chemical a gical properties. Madison ni, Abdullah Najm, 19 of Soil Science, Ministry cation and scientific research R.E, 1979, Introduction to and practices of soil scient scientific publication .L. et. Al. 1982, Methods of a

	microbiological properties. Madis Wisconsin, USA
Electronic References, Websites	Local, regional and international scient books and journals concerned with fertility, especially within scientific virtual libraries.

		Course Description Form		
1. Course Nam	e:	• •		
Soil Microbiol	ogy			
2. Course C	lode:			
AFC1928				
3. Semester	/ Year:			
Semester 2023	2024			
4. Descripti	on Preparation	on Date:		
25 \ 1 \ 2024			-	
5. Available	e Attendance	Forms:		
Theoretical lect	ures, laborate	ories, field and field visits.	-	
6. Number	of Credit Ho	urs (Total) / Number of Units (Total)		
75 hours $\setminus$ 15 u	units			
7. Course a	dministrator's	s name (mention all, if more than one name)		
Name: Prof. Dr	. Jamal Salih	Alkobaisy \ Prof. Dr. Ali Abaas Kadim	-	
Email: <u>ag.jamal</u>	.saleh@uoar	bar.edu.iq \ <u>ali.khadum@uoanbar.edu.iq</u>		
8. Course C	bjectives			
Course Object	ives	1- Soil microbiology examines giving a historical overview, definition, and impo of studying soil microbiology.	i t <b>an</b>	
		2- It includes the definition of the groups of soil microorganisms: bacteria, fung algae, actinomycetes, protozoa, and root fungi.	i	
		<b>3-</b> Students get acquainted with the biological transformations of N, the nitroget the decomposition of urea, the nitrite process, mineralization and assimilation.	ı cy ( /N	
		ratio. 4- The student's knowledge of the biological transformations of phosphorus: its	vel	
		and the role of microorganisms in its transformations.	roc	
o <b>m</b> 1:	1	(the rhizosphere) and the activity of micro-organisms in this area.		
9. Teaching	and Learnin	g Strategies		
Strategy	1- Brai	nstorming		
	2- Thir student	iking strategy according to the student's ability (for example)	i t t.	
	distinguish The beneficial from the harmful.			
3- Critical thinking strategy in learning, which is a term that symboli			es	
	the hig	hest levels of thinking that aims to pose a problem. Then analy	ze	
	Togreat			
11. Course Str	ucture			

						ĺ
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessmen <sup>.</sup> Method	
First	5	The student gets to know the importance of studying soil microbiology.	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Second	5	The student learns about the sections of soil microbiology	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Third	5	The student gets to know the groups of neighborhoods microscopic soil	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Fourth	5	The student learns about the organic matter, the carbon cycle, and the enzymatic activity in the soil.	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Fifth	5	The student learns about the nitrogen cycle and its biological transformations.	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Sixth	5	The student learns about biofixation for nitrogen	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
seventh	5	The student learns about the cycle of phosphorous and its biological transformations	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Eighth	5	The student learns about the cycle of sulfur and its biological transformations.	Soil Microbiology	Lecture, explanation and presentation of models	the exam	
Ninth	5	The student learns about transformations iron vitality.	Soil Microbiology	Lecture, explanation and presentation of models	the exam	

Tenth	5	The student learns about the decomposition of pesticides in the soil.	Soil Mic	robiology	Lecture, explanation and presentation of models	the exam	
eleventh	5	The student learns about the relationships between Microbiology.	Soil Mic	robiology	Lecture, explanation and presentation of models	the exam	
twelfth	5	The student learns about the surrounding area Roots and the activity of their living things.	Soil Microbiology		Lecture, explanation and presentation of models	the exam	
Thirteenth	5	The student learns about the nutrition of living things microscopic, multiplying.	Soil Mic	robiology	Lecture, explanation and presentation of models	the exam	
fourteenth	5	The student learns ways to isolate Some microorganisms from soil	Soil Microbiology		Lecture, explanation and presentation of models	the exam	
fifteenth	5	The student will identify ways to isolate other microorganisms from soil	Soil Mic	robiology	Lecture, explanation and presentation of models	the exam	
10.Co	ırse Eval	uation					
Distributi	ng the sc	ore out of 100 accord	ding to	the tasks as	signed to the studen	t such as dail y	
11.Lea	rning an	d Teaching Resource	es	anis, reports	5 Cit		
Required	textbook	s (curricular books, i	f	1- Ghiath	Muhammad Oasim a	and Mudar Abd	dul
any)				Sattar Ali (1989). Soil microbiology. Directorate of Dar Al-Kutub for Printing ar			
				2 Martin	Alexander, 1982, I	ntroduction t	
Main refe	rences (s	ources)		1- Foreign	, Iraqi and Arab scie	entific journa s	
Deserve		also and sefere as		2- Mmicro	biology of soil, web	osites.	.1
(scientific	journals	, reports)		- Martin A Microbiolo	ogy, translated by Jo	hn Wilev	Ш
	J	· · <b>r</b> · · · · · · · · · · · · · · · · · · ·			<u> </u>		

Flectronic References Websites	Electronic lectures scientific trips and fi
Electronic References, websites	visits
	VISIO

1. Course Name:						
Soil principl	es					
2. Course	Code:					
AFC1918						
3. Semest	er / Yea	ar:				
Semester 20	23_202	24				
4. Descrip	otion Pr	eparation Date:				
25/1/2024						
5. Availab	le Atter	ndance Forms:				
Attendance (	theoret	ical + practical)				
6. Number	r of Cre	dit Hours (Total) / N	umber of Units	(Total)		
60 hours / 3.	5 units					
7. Course	e admin	istrator's name (me	ention all, if mo	ore than one	name)	
Name:	Huthafi	a jaseem mohammo	d			
Email:	ag.hutha	fia.Jaseem@uoanbar.eo	du.iq			
8. Course	Objecti	ves				
1. Identify the	soil, whi	ch is the upper part o	f the eart 4. Lea	rn about anal	ysis methods	
2. Understandi	ng the	mechanism of soil for	mation a 5. Us	e some labora	ic. atorv equipm	
development.			and fie	eld tools.		
3.						
Identify the p	hysical,	chemical, fertility an	d biologi			
9. Teachir	ng and L	Learning Strategies	I			
Strategy	1.	Traditional means of e	explanation and c	larification.		
	2.	Electronic means of ex	planation and cla	arification.		
	3.	Field work.		_		
	4.	Adopting student grou	ps for field work	to take measu	rements.	
	5. 6	Use of surveying devic Show illustrative nictu	es and equipmen	L and their acce	ssories	
	0.	Show mustrative pieto	ites of the devices	and then acce	5501105.	
10. Course S	tructure					
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation	
		Outcomes	name	method	method	
	5	Soil development	Soil	A lecture w	The exam	
The first		and formation	principles	explanation		
				and clarification		
the second	5	Principles of soil	Soil principle	S A lecture w	The exam	

		science		explanation and clarification	
the third	5	Physical properties soil	Soil principles	A lecture w explanation and clarification	The exam
the fourth	5	Soil water	Soil principles	A lecture w explanation and clarification	The exam
Fifth	5	Estimation of moist content	Soil principles	A lecture w explanation and clarification	The exam
VI	]	First month exam - theo	pretical and praction	cal	
Seventh	5	Estimation of bullk and true density and porosity	Soil principles	A lecture w explanation and clarification	The exam
VIII	5	Colloids and soil chemical properties	Soil principles	A lecture w explanation and clarification	The exam
Ninth	5	analysis of soil particles	Soil principles	A lecture w explanation and clarification	The exam
The tenth	5	Salinity and alkalinity in the soil	Soil principles	A lecture w explanation and clarification	The exam
Eleventh	5	Preparation of saturated soil paste	Soil principles	A lecture w explanation and clarification	The exam
Twelveth	5	Biological and biochemical properties of soil	Soil principles	A lecture w explanation and clarification	The exam
Thirteenth		Second month exam - tl	neoretical and prac	ctical	
fourteenth	5	Soil fertility and plant nutrition	Soil principles	A lecture w explanation and clarification	The exam
Fifteenth	5	Estimation of organic matter	Soil principles	A lecture w explanation and clarification	The exam

1- Rapid	daily	tests.
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2- Theoretical tests.

3- Practical tests.

4- Research and reports.

12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)	Soil principles/Abdullah Najm Al-Ani				
Main references (sources)	Soil principles/Abdullah Najm Al-Ani				
Recommended books and references (scientific	Soil salinity / Ahmed Haider Al-Zubaidi Soil fertility / Kazem Mashhout				
journals, reports)	Soil Chemistry / Kazem Mashhout				
	Soil survey and classification / wand Al-Akidi Soil physics/Mahdi Ibrahim Odeh				
Electronic References, Websites	Local, regional and international scient				
	books and journals concerned with				
	iertility, especially within scientific a				

1 Course No	222.0.1					
Basics of plan	nie:	and topography				
2 Course Code:						
2: Course code.						
3 Somost	$\frac{1}{10}$	лr				
5. Semest						
Semester : 2	2023_2	.024				
4. Descrip	otion Pr	eparation Date:				
25/1/2024		1				
5. Availab	ole Atter	ndance Forms:				
Attendance (	theoret	ical + practical)			Γ. (1)	
6. Number	r of Cre	dit Hours (Total) / Ni	umber of	t Units (	l otal)	
7 Cours / 3.	<u>5 units</u>	vistrator's name (mo	ontion of	llifmo	o than and	namo)
Name	<del>, aunni</del> Huthafi	a jaseem mohammo	1	<u>II, II IIIO</u>		name)
Email:	aghutha	fia.laseem@uoanbar.eo	iu.ia			
8 Course	Ohiectiv		iunq			
1 Understand	the basic	nrinciples of methoms	tics	1 Loor	n about mo	suring moth
1. Understand	the Dasic	principles of mathema	uics	with sin	nple tools an	d how each t
2. Learn about	the scan	ning that collects inform	mation fr	works	1	
the hospital						
3. Read brows	ser read	ing from private seau	rch data	5. Use learn a	some survey bout their	ng devices a
previously drav	vn brows	ser reading	chi uuuu	function	of each one	puits und
9. Teachir	ng and L	earning Strategies				
Strategy	1.	Traditional means of e	xplanatio	on and cla	rification.	
	2.	Electronic means of ex	planation	and clar	ification.	
	<b>3.</b> <b>4.</b>	Adopting student grou	ps for fiel	ld work t	o take measu	rements.
	5.	Use of surveying device	es and equ	uipment.		
	6.	Show illustrative pictu	ires of su	rveying e	equipment, its	accessories, a
	su 7	rvey work accessories.	rec of ver	ious field	onorations	
	/.	Show mustrative pictu	les of var	ious neiu	operations.	
10. Course S	10. Course Structure					
Week	Hours	Required Learning	Unit or s	subject	Learning	Evaluation
		Outcomes	name		method	method
	5	Definition of surveying, ty	Basics of	plane	A lecture w	The exam
The first		of surveys, requirements for	space an	d	explanation	
1		5000 survey, me importance	l topograp	hv	and	
		surveying in agriculture		,,		
		surveying in agriculture			clarification	

the second		Measurement systems, unit	Basics of plane	A lecture w	The exam
		measurement, errors mistakes	space topography	explanation and	
				clarification	
the third		Tape scanning, sta selection conditions, field b arrangement	Basics of plane space and topography	A lecture w explanation and	The exam
				clarification	
the fourth	5	Errors in survey work, way address them and overco them	Basics of plane space and topography	A lecture w explanation	The exam
			topography	allu clarification	
Fifth		Drawing scale, its ty categories, and determine	Basics of plane	A lecture w	The exam
	5	factors	topography	and	
VI	1	First month oxam - that	rotical and practic		
Seventh	5	Areas, regular and irreg	Basics of plane	A lecture w	The exam
Seventii	5	shapes, area with coordinate	space and topography	explanation and	The exam
17111	-	Lovaling its tomainal		clarification	<b>T</b> 1
VIII	5	types of adjustment, and u of the leveling device	space and	A lecture w explanation	The exam
			topography	and	
Ninth	5	Types of settlement,	Basics of plane	A lecture w	The exam
		fracture and their treatment	space and topography	explanation and	
				clarification	
The tenth	5	calculating point levels and elevation	Basics of plane space and topography	A lecture w explanation and	The exam
		indirect		clarification	
Eleventh	5	Making longitudinal secti defining them, determinin	Basics of plane space	A lecture w explanation	The exam
		of points, and drawing scale	topography	and clarification	
Twelveth	5	Calculating point lev measuring distances, projecting the design and ac sections	Basics of plane space and topography	A lecture w explanation and	The exam
Thirteenth		Second month exam - th	eoretical and nrad		
fourteenth	5	Topographic m representation methods	Basics of plane space	A lecture w explanation	The exam
			торовгариу	and clarification	

Fifteenth	5 ( 1 i	Contour lines, meth finding area and nterval, finding conto ine properties	nods con our li	Basics space topogr	of plane aphy	A lecture w explanation and clarification	The exam
11. Course	11. Course Evaluation						
<ol> <li>Rapid daily te</li> <li>Theoretical te</li> <li>Practical tests</li> <li>Research and</li> </ol>	ests. sts. reports.						
12. Learning and Teaching Resources							
Required textbooks (curricular books, if any)					Al-Khafaf, Riyad Saleh, 2000, Foundation of Plane Surveying and Topograp College of Agriculture, University Mosul, Iraq		
Main references	(sources)				Al-Khafaf, of Plane College o Mosul, Iraq	Riyad Saleh, 2 Surveying a f Agriculture	2000, Foundati nd Topograp , University
Recommended journals, reports	books a )	and references	(scie	entific	Younis, S Agricultura Agricultura Agriculture	amir Muhamı ıl Survey, ıl Engineerir ç, Alexandria U	mad, 2003-20 Department 1g, Faculty Jniversity, Egy
Electronic Refer	ences, We	bsites			Local, regine books and fertility, es virtual libra	onal and intern journals con specially with aries.	national scient cerned with s in scientific a

<b>Course Description Form</b>
25. Course Name:
Agricultural equipment and tractors
26. Course Code:
AFC1910
27. Semester / Year:
Semester 1/ 2023_2024
28. Description Preparation Date:
September 25_1_2024
29. Available Attendance Forms:
By attendance
30.Number of Credit Hours (Total) / Number of Units (Total)
5/3
31. Course administrator's name (mention all, if more than one
Name, Dr. Charwen Husen Taufoog
Finally as sharwan hussam@ucanhar.edu.id
20 Course Objectives
32. Course Objectives
Identifying the design and application engineering fundamentals of agricultu
tractors, which enables students of the Department of Field Crops to deal with the
and working methods of machines found in agricultural fields.
33. Teaching and Learning Strategies
1. To learn about the basic principles of repair and maintenance of engines and means power transmission.
2. To learn about the basic principles of agricultural equipment and maintenance metho
3 To loarn about the orginaaring basics of machines the development of the

3. To learn about the engineering basics of machines, the development of th manufacture, and methods of dealing with these devices and equipment.

4. Course Structure						
Week	hrs./week	Subject	Education output	Education method	Assessment method	
1	Theoretical part (3hrs) Practical part (2hrs)	Details and definition of tractors and farm work	Identify topics	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	

	1					
2	Theoretical part (3hrs) Practical part (2hrs)	Classification of tractors according to manufacturing and design concepts	Types of agricultural tractors	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
3	Theoretical part (3hrs) Practical part (2hrs)	Definition and explanation of the components of the agricultural tractor	Main tractor parts	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
4	Theoretical part (3hrs) Practical part (2hrs)	Engine classification, definition, and explanation of its components	Engines and their types	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
5	Theoretical part (3hrs) Practical part (2hrs)	The method of ignition of fuel types and their effect on the performance of each type	Cycle of movement of pistons in an engine	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
6	Theoretical part (3hrs) Practical part (2hrs)	Benefits of oil and components of the system	Engine lubrication device	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
7	Theoretical part (3hrs) Practical part (2hrs)	Types of engine cooling, their parts and operation	Engine cooling system	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
8	Theoretical part (3hrs) Practical part (2hrs)	First monthly exam	First monthly exam			
9	Theoretical part (3hrs) Practical part (2hrs)	The hydraulic system of the tractor	installation and operation of the system	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
10	Theoretical part (3hrs) Practical part (2hrs)	Power take-off shaft	types and connection methods	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
11	Theoretical part (3hrs) Practical part (2hrs)	The tractor's fuel system	installation and operation of the system	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
12	Theoretical part (3hrs) Practical part (2hrs)	Occupational safety	Occupational safety	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
---	--	--	---	---	---	--
13	Theoretical part (3hrs) Practical part (2hrs)	Use of the positioning system and methods of using it in agricultural tractors.	Smart and advanced devices to treat crops	Curriculum + assignment + video + data presentation + practical	Class discussion and daily exam	
14	Theoretical part (3hrs) Practical part (2hrs)	Second monthly exam	Second monthly exam			
5. Course Evaluation						
Distributing the score out of 100 according to the tasks assigned to the student such a daily preparation, daily oral, monthly, or written exams, reports etc						
6. Le	arning and Te	aching Resources				
Required	d textbooks (curr	icular books, if any)	<ol> <li>Agricultural fundamenta Written by Ayoub Al-Sa</li> <li>Basics of tr Written by</li> </ol>	tractors and the als of orchard m Professor Dr. Ab abbagh. actors and agric Mr. Lotfi Hussei	e echanization. odul Rahman cultural equipme n Muhammad A	
Main ref	erences (source	s)	PDF (mechaniclub.com) كتاب ميكانيكا وهندسة الات زراعية			
Recomm	nended books ar	nd references (scientific	Agricultural mechanization in development. Guidelines for strategy formulation (fao.org)			
journals,	reports)			<u>,</u>		
Electron	c References, V	Vebsites	Guide-to-good-plo	ughing.pdf (agrii.co	<u>o.uk)</u>	

		Course De				
1. Course Name:						
Engineeri	ing Draw	ing				
2. Cou	irse Code	2:				
AFC1944	•					
3. Sen	nester / Y	Year: semester				
2023_202	24					
4. Des	cription	Preparation Date:				
25\1\2024	4					
5. Ava	ailable At	tendance Forms:				
Atte	endance					
<u>6. Nur</u>	$\frac{\text{nber of C}}{2}$	Credit Hours (Total) /	Number of Units (To	otal)		
	L Lirso adm	ninistrator's name (	mention all if more	than one name	)	
Nar	ne: Marv	va Yass Khudair			<u>)</u>	
Em	ail: <u>ag.ma</u>	arwa.yass@uoanba	<u>r.edu.iq</u>			
8. Cou	urse Obje	ctives				
Basic Under	rstanding:	Introducing students to	the fundame			
concepts of scales. Analy	geometric or geometric of geometric of the second s	drawing, including symbo erpretation: Empowering	ils, dimensions, students to anal			
and interpre	t geometric	drawings and diagrams e	efficiently. Techn			
Skills Develo	opment: Enl	hancing students' skills i aditional tools like ruler an	in using geome d compass			
9. Tea	iching and	d Learning Strategie	S			
Strategy		Interactive Teaching: U	Jsing classroom discussions ar	nd workshops to enhance	e interaction amo g	g stu
0,		and exchange of ideas. applications.	This helps deepen students' un	nderstanding of geometri	c drawing concep s	and
		Flipped Classroom: Stu for practical applicatior	dents review theoretical conte	nt outside the classroom	, while class time s	s allo
		Cooperative Learning: exchange, leading to im	Encouraging students to worl proved communication and tea	c in groups to promote mwork skills.	collaboration and k	now
Utilization of Diverse Resources: Providing a wide range of educational resources, including i stru- videos e-books and scientific articles to enhance understanding and expand knowledge						struc
10. Course Structure						
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation	
		Outcomes	name	method	method	
1	2	Absolute Value	Engineering	Attendance	Class	
			drawing		assigr r	nen
2	2	Learning Draw	Engineering drawing	Attendance	Class	005
		Importance			assignt	iem
	•	•			·	

3	2	Introduction Types of Lines Engineering Drawing	En dra	gineering awing	Attendance	Class assigr nen		
4	2	Learning I Bisecting	En dr	gineering awing	Attendance	Class assigr men		
5	2	Geometric Operations	En dr	gineering awing	Attendance	-		
6	2	Parallelism Dividing Li Equally and Different Proportions	Engineering drawing		Attendance	Class assigr nen		
7	2	Exam	En dr	gineering awing	Attendance	Class assignmen		
8	2	Learning Triangular, Quadrilateral, Pentagon Shape	Engineering drawing		Attendance	Class assigr nen		
9	2	Learning Hexagonal, Heptagonal, Octagonal Shap	En dra	gineering awing	Attendance	Class assigr nen		
10	2	Learning Nona and Deca Shapes	Engineering drawing		Attendance	-		
11	2	Learning Individ Polygons	En dra	gineering awing	Attendance	Class assigr men		
12	2	Learning Pai Polygons	En dra	gineering awing	Attendance	Class assign men		
13	2	Oval	En dr	gineering awing	Attendance	Class assign men		
14	2	Exam	En dr	gineering awing	Attendance	-		
11. Cou	urse Evalu	ation						
Distributin preparation	Distributing the score out of 100 according to the tasks assigned to the student such as preparation, daily oral, monthly, or written exams, reports etc							
12. Learning and Teaching Resources								
Required textbooks (curricular books, if any)         Engineering drawing								
Main references (sources)       Learning Applications of Engineering Drawi						gineering Drawing		
Recommen	Recommended books and references (scientific Engineering Operations Handbook							
journals, rep	ports)							
Electronic References, Websites -Geometry Learning Pages								

1. Course Name:

Drainage

2. Course Code:

#### AFC19212

3. Semester / Year:

Semester 2023\_2024

#### 4. Description Preparation Date:

#### 25/01/2024

5. Available Attendance Forms:

Attendance (theoretical + practical)

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

60 hours / 3 units

### 7. Course administrator's name (mention all, if more than one name) Prof. Dr. Shuker Mahmood Hasan

smhasan@uoanbar.edu.iq

8. Course Objectives

1. Teaching UG students the basics of drainage.

2. Teaching UG students the problems of drainage.

- 3. Teaching UG students the design and construction of drainage networks.
- 4. Teaching UG students the concepts of floods and methods of controlling them.

#### 9. Teaching and Learning Strategies

#### Strategy

- 1. Traditional means of explanation and clarification.
- 2. Electronic means of explanation and clarification.
- 3. Field work.

10 Courso Structuro

- 4. Adopting student groups for field work to take measurements.
- 5. Show illustrative pictures of the devices and their accessories.

Week	Hours	Required Learning	Unit or	Learning method	Evaluation			
		Outcomes	subject		method			
			name					
One	5	Drainage under standable, purpose drainage, advantages of drainage drainage in Iraq	Drainage	A lecture with explanation a clarification	The exam			
Two	5	Physical soil properties and its rela with drainage	Drainage	A lecture with explanation and clarification	The exam			
Three	5	Water flow in soils, pioseuilles la	Drainage	A lecture	The exam			

					V	vith explanation a	
Four			First mont	h exam - theor	etic	clarification and practical	
Five		Evaporation, transpiration	, n, infiltrati	Draina	ge	A lecture with explanation and clarification	The exam
Six	5	Stream flow mea	surement	Drainage	è	A lecture with explanation a clarification	The exam
Seven	5	Water timer o	curves	Drainage	è	A lecture with explanation and clarification	The exam
Eight	1	9	Second mor	nth exam - theo	ret	ical and practical	
Nine	5	Floods ex	pectations	Drainage	A wi an	lecture th explanation d clarification	The exam
Ten		Sub surface	water and i	ts resources			
Eleven	5	Soil Water and it distributi	ts vertical on	Drainage	A wi an	lecture th explanation d clarification	The exam
Twelve	5	Ground water m	ovement	Drainage	A wi an	lecture th explanation d clarification	The exam
Thirteen		Thi	rd month e	xam - theoretic	al a	and practical	
Fourteen			Genera	l Review of the	ma	terial	
Fifteen		F	ield Visit to	o drainage proj	ject	in college	
11. C	ourse Eva	aluation					
1- Daily o 2- Month 3- Prepar 4- Daily p 5- prepar	<ol> <li>Daily exams.</li> <li>Monthly tests.</li> <li>Preparing and delivering seminars.</li> <li>Daily posts.</li> <li>preparing the special problem.</li> </ol>						
12. L	earning a	nd Teaching Res	ources				
Required	textbooks	(curricular books	Investigatio	n, design, implem	nent	ation and maintenance /	
any)	any)						
Main references (sources)			Investigation, design, implementation and maintenance / Dr. Mohsin M. Allami and Dr. Alaa S. Aljanabi				
Recommended books and references Irrigation and Drainage / Laith I. Khalil							
(scientific	journals, r	eports)					
Electronic	c Reference	es, Websites	Researche	es and Studies	pri	nted from Internet	

34	ſo	urse Name	•						
Land c	Land cultivation								
35	35 Course Code:								
AFC1	<u>934</u>								
36.	Sp	ring semes	ter/ Autumn semester						
2023_	2024								
37.	Th	e date this	description was prepared is 4-8-2	024					
25_1_	2024								
38.	Available	e Attendanc	e Forms:						
	morning	and evening	g, 95% morning and 75% evening						
39.	Number	of Credit H	ours (Total) / Number of Units (Tota	1)					
-	Five hou	rs of theory	+ practical						
40.	Co	ourse admi	nistrator's name (mention all, if m	ore th	an one				
	name)								
	Name: P	rof. Dr. Om	ar Ismail Mohsen						
41.	Co	ourse Objec	tives						
	<ul> <li>Objectives of the course: We explain to students the importance of understanding the factors affecting plants, including climatic and other environmental conditions, and their relationship mainly to plants, in a sequential scientific manner. In addition, we introduce students to the steps</li> </ul>								
	an	d types of cu	lture, and future plans to avoid its risks.						
42.	Те	aching and	Learning Strategies						
Strategy	Strategy								
43. Course Structure									
Week	Hours	Required	Unit or subject name	Lear	Evaluation				
		Learning		ning	method				
		Outcomes		met					
				hod					
1	2 theoretical practical		The first lecture: factors of crop production, f production and population growth.		Daily exam participation in lesson + writ scientific reports monthly exams				
2	2		Second lecture: Carbon metabolism in crop plants						

	theoretical		
2	practical		
3	2 theoretical practical	The third lecture: Factors for increasing production plant density, leaf area, and planting date	
4	2	Fourth lecture: Nitrogen fixation and increa	
	theoretical	productivity, land productivity,	
	practical	succession, ecosystems.	
5	2	Fifth lecture: The relationship of energy expende	
	theoretical	crop productivity, energy calculations	
	practical	cultivating hectares, processes to incre	
		the efficiency of energy use.	
6	2	Sixth lecture: post-harvest losses, measuring los	
	theoretical	percentage and types of losses, measure	
	practical	reduce losses.	
7	2	Seventh lecture: Branching in crop plants and	
	theoretical	relationship to productivity, factors affec	
	practical	branching, factors of emergence in e	
		plants, the root and the root environment	
8		Eighth lecture: Land defects, distribution of pl	
	theoretical	according to climate, extents of horizo	
	practical	expansion of land cultivation, steps	
		horizontal agricultural expansion in the A	
0		world.	
9	2 theoretical	Ninth lecture: Cultivation of lands	
	theoretical prostical	repographical defects, crops suitable for	
	practical	reclamation period, cultivation of clay, s	
		defects	
10		Tanth lacture: Evidence of agriculture developm	
10	theoretical	of vegetation plants of desert sol	
	practical	or vegetation, plants of desert, sa	
11		Lecture 11: Irrigation and cultivation peads d	
11	theoretical	productivity under irrigation	
	practical	relationship of irrigation water to	
	Practical	expected vield water stress and soil text	
		water requirements of crops.	
12	2	Lecture 12: Soil biology and the add	
	theoretical	environment, soil horizons and soil ty	
	practical	the relationship of soil depth to its adu	
	1	life, fungi and algae in soil.	
13	2	Lecture 13: General notes on land culture,	
	theoretical	tolerant plants, plant tolerance	
	practical	exchangeable sodium, calcium carbo	
	-	and pH.	
14	2	Lecture 14: Crop service under conditions	
	theoretical	cultivation, irrigation, and salinizat	
	practical	windbreaks in farmland, water and biol	
		in a desert climate, types of trees suitable	
		cultivation in arid areas, the effect	
		windbreak trees on productivity.	
15	2	Lecture 15: Factors of crop production, 1	
	theoretical	production and population growth.	
	practical		

44. Course Evaluation	
Distributing the score out of 100 according to the tasks assig preparation, daily oral, monthly, or written exams, reports	ned to the student such as daily etc
45. Learning and Teaching Resources	
Required textbooks (methodology, if any) Land cultivation, F .	
Main references (sources) - Al-Sahuki Medhat Maieed 19	
Cultivation of degraded lands. College of Agriculture - Univer	
of Baghdad	
Recommended supporting books and references (scientific	
journals, reports) Al-Muaini, Iyad Hussein Ali and	
Muhammad Awaid Ghadeer Al-Obaidi. 2018. Scientific	
foundations for the management, production and	
improvement of field crops. Ministry of Higher Education	
and Scientific Research. Republic of Iraq. p. 1	
Anmed, Riyad Abdel Latif. 1984. Water in plant life. Bo	
Al Zubaidi Ahmed Haider 1989 Soil salinity theoretical	
applied foundations 7th edition Dar Al-Hekma University	
Baghdad, Ministry of Higher Education and Scientific Resea	
Iraq. On page 308. 3	
-Al-Awadi, Jassim Muhammad. 2011. Reclamation	
cultivation of saline lands. Our Environment Magazin	
Environment Public Authority - State of Kuwait. Issue 69	
Electronic references, Internet sites	
Required textbooks (methodology, if any) Land cultivation, F	
Dr. Medhat Majeed Al-Sahuki	

				e zeseription i o				
46.	46. Course Name:							
Princip	Principles of Animal production							
47.	47. Course Code:							
AFC19	927							
48.		Se	emester / Year: SF	PRING				
2023-	2024							
49.		De	escription Prepara	tion Date				
25/1/2	2024							
50.4	Availa	abl	e Attendance Form	s:				
I	N CL	A	SS					
51.1	Numb	er	of Credit Hours (To	otal) / Number of U	nits (Total):			
50	5HOL	JR	S/3.5 UNITS			the second		
52. r	name	( 2)	ourse administration	or's name (mentio	n all, if more	than one		
1	Name	: A	ssist. Prof. Dr. Mo	hammed A. AL-Bay	/ar			
I	Email	: a	g.mohammed.ala@	ouoanbar.edu.iq				
53.		Сс	ourse Objectives					
Course	Objecti	ives	5	1- know imp	ortance of animal p	roduction economy		
				2- know cattl 3- know imp	ortant methods for a	animals management		
				4- know prin	ciples on animal fee	eding		
				6 - know nriv	nciples of animal	n heid management		
						onysiology		
54.		Τe	eaching and Learnin	ng Strategies				
Strategy	,		Teaching there	olotical parts in cla	ass by using d	ata show and		
			some new me	thods, while practi	cal part teach	ı in animal field		
55 Course Structure								
Week	Hour		Required Learning	Unit or subject	Learning	Evaluation		
WEEK	nour	3						
			Outcomes		metnod	method		
finat	E		Local and	Principles of Iraqi	Power point	Ouiz		
IIISt	3		breeds	and international	and PDF me	Quiz		
			biccus	Principles of Iragi	Power point			
Second	5		Local and internation	and international	and PDF file	Practical		
200010	5		sheep breeds	sheep breeds	lecture	examinati		
Third	5		Reproduction in	Male and female	Power point	Quiz		

		animals	repro	duction organs	and practica	
					study	
			Food	contants food	Power point	
Fourth	5	Animal nutrition	analy	sis	and PDF file	Quiz
			j·		lecture	
			Milki	ng machines a	Power point	
Fifth	5	Milk production	milk	secretion	and practica	Quiz
					study	
			Princi	ple of poultry	Power poin	~ .
Sixth	5	Poultry production	types and poultry		and practic	Quiz
			production		study	
~ 1	_	5 Milk secretion	Milk secretion physiology		Power point	
Sevent	5				and practic	Quiz
					study	
56. 0	Course	Evaluation				
Distribu	iting the	score out of 100 ac	cordin	g to the tasks a	assigned to the	e student such as
daily pr	eparatio	n, daily oral, monthly	, or wr	itten exams, rej	ports etc	
57. L	earning	and Teaching Re	source	S		
Required textbooks (curricular books, if any)				Principles of farm animals productio		
Main references (sources)			Principles of farm animals production			
Recommended books and references			Cattle management			
(scientific journals, reports)				Sheep and goat management		
Electronic References, Websites				Youtube.com		
				Springer.com		

Beekeeping         59. Course Code:         AFC1922         60.       Semester / Year: Second/ Third         2023_2024         61.       Description Preparation Date:         2024/1/25         62. Available Attendance Forms:         Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):         SHOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED       Email: muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A - Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping       A 6- Real knowledge of practical methods for managing the apiary.         67. Course Structure       Vite       Vite          Initial the introduction	58	58. Course Name:								
59.       Course Code:         AFC1922       60.         60.       Semester / Year: Second/ Third         2023_2024       61.         61.       Description Preparation Date:         2024/1/25       62.         62.Available Attendance Forms:       Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):       5HOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED       Email: muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping       A 5- Knowing the correct and modern methods of beekeeping         A 5- Knowing the correct and modern methods for managing the apiary.       67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluatio	веекееріпд									
AFC1922         60.       Semester / Year: Second/ Third         2023_2024         61.       Description Preparation Date:         2024/11/25         62.Available Attendance Forms:         Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):         SHOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping         A5 - Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning </td <td>59</td> <td colspan="8">59. Course Code:</td>	59	59. Course Code:								
60.       Semester / Year: Second / Third         2023_2024         61.       Description Preparation Date:         2024/1/25         62. Available Attendance Forms:         Lectures         63. Number of Credit Hours (Total) / Number of Units (Total):         5HOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.ig         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.       A4- Knowing the correct and modern methods of beekeeping         A 5- Knowing the correct and modern methods of beekeeping       A 5- Real knowledge of practical methods for managing the apiary.         67. Course Structure       Veek       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial the introduction knowledge Development and abuees breeding of bees and       Devel	AFC1	.922								
2023_2024         61.       Description Preparation Date:         2024/1/25         62. Available Attendance Forms:         Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):         5HOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.ig         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A5 - Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67.       Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial the introduction knowledge Development and abuvees breeding of bees and       Quiz<	60	. 9	Semester /	Year: Second/ Third						
61.       Description Preparation Date:         2024/1/25         62. Available Attendance Forms:         Lectures         63. Number of Credit Hours (Total) / Number of Units (Total):         5HOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping       A6 - Real knowledge of practical methods for managing the apiary.         67.       Course Structure       Veekee         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introducti	2023_	2023_2024								
2024/1/25         62.Available Attendance Forms:         Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):         5HOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping       A6 - Real knowledge of practical methods for managing the apiary.         67.       Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz         1       5	61	61. Description Preparation Date:								
62. Available Attendance Forms:         Lectures         63. Number of Credit Hours (Total) / Number of Units (Total):         SHOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t         bee insect, what is the economic and medical importance of raising this insect, how t         deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping         A 6- Real knowledge of practical methods for managing the apiary.         67.       Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial knowledge       the introduction knowledge       Lecture       Quiz	2024	/1/25								
Lectures         63.Number of Credit Hours (Total) / Number of Units (Total):         SHOURS/3.5 UNITS         64. Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email: muhammed.abed@uoanbar.edu.iq         65. Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66. Teaching and Learning Strategies         A - Knowledge and Understanding         A1- Understand the science of beekeeping         A - Knowledge and Understanding         A1- Understand the science of beekeeping         A - Knowing the correct and modern methods of beekeeping         A - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week         Mours         Learning         Learning         Learning         Course Structure         Week         Media         Learning	62.	.Availal	ble Attendar	nce Forms:						
63.Number of Credit Hours (Total) / Number of Units (Total):         SHOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED         Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping       A6 - Real knowledge of practical methods for managing the apiary.         67.       Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial the introduction knowledge       Development and about bees and       Quiz		Lecture	es							
SHOURS/3.5 UNITS         64.       Course administrator's name (mention all, if more than one name)         Lacturer . Mohammed Majid ABED       Email: muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping       A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.       67.         Week         Hours       Required         Unit or subject name       Learning       Evaluation         method       method       method         1       5       Initial the introduction knowledge of beeke and bevelopment and about beek breeding of bees and       Lecture       Quiz	63.	Numbe	er of Credit l	Hours (Total) / Number	of Units (Total):					
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Lacturer . Mohammed Majid ABED         Email: muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t         bee insect, what is the economic and medical importance of raising this insect, how t         deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A 6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz	64	name)	Jourse adr	ninistrator's name (m	ention all, if mor	e than one				
Email:       muhammed.abed@uoanbar.edu.iq         65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t bee insect, what is the economic and medical importance of raising this insect, how t deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding       A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees       A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping       A 5- Knowing the correct and modern methods of beekeeping         A 5- Knowing the correct and modern methods for managing the apiary.       67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz		Lactur	er . Moham	med Majid ABED						
65.       Course Objectives         The beekeeping course, both practical and theoretical, aims to introduce students to t         bee insect, what is the economic and medical importance of raising this insect, how t         deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the correct and modern methods of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A 6 - Real knowledge of practical methods for managing the apiary.         67.       Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz		Email:	muhammed	.abed@uoanbar.edu.iq						
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deal with it correctly, and what is the benefit of beekeeping.         66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A 6- Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours         Required       Unit or subject name         Learning       Evaluation         0utcomes       Method         1       5       Initial         1       5       Initial         he introduction       Lecture       Quiz	bee in	sect, wl	hat is the eco	onomic and medical im	portance of raisin	g this insect, how t				
66.       Teaching and Learning Strategies         A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67.         Course Structure         Week       Hours         Required       Unit or subject name         Learning       method         0utcomes       nethod         1       5         Initial       the introduction         knowledge       Development and         about bees       breeding of bees and	deal w	vith it co	orrectly, and	what is the benefit of l	beekeeping.					
A- Knowledge and Understanding         A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours         Required       Unit or subject name       Learning         Learning       method       method         1       5       Initial       the introduction         knowledge       Development and       Lecture       Quiz	66	. 7	Feaching an	d Learning Strategies						
A1- Understand the science of beekeeping         A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz	A	- Knov	vledge and U	Jnderstanding						
A2- Identify the types and breeds of honey bees         A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz	1	A1- Uno	derstand the	science of beekeeping						
A 3- Distinguish between the different pests that infect bees.         A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz	A	A2- Iden	tify the type	es and breeds of honey	bees					
A4- Knowing the economic importance of beekeeping         A 5- Knowing the correct and modern methods of beekeeping         A6 - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         0utcomes       0utcomes       nethod       nethod       nethod       nethod         1       5       Initial       the introduction       Lecture       Quiz         about bees       breeding of bees and       breeding of bees and       Development and       Development and	A	3 - Dis	tinguish bet	ween the different pests	s that infect bees.					
AG - Real knowledge of practical methods for managing the apiary.         67. Course Structure         Week       Hours       Required       Unit or subject name       Learning       Evaluation         0utcomes       Outcomes       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz	A	4 - Kno	wing the eco	onomic importance of t	beekeeping	<b>~</b>				
Ability Required colspan="3">Note Recurrence of practical methods for managing the aprary.         67. Course Structure       Unit or subject name       Learning       Evaluation         Week       Hours       Required       Unit or subject name       Learning       Evaluation         1       5       Initial       the introduction       Lecture       Quiz         1       5       Initial       the introduction       Lecture       Quiz		$\Delta 6 - R$	owing the co eal knowled	ge of practical methods	for managing the	aniary				
Week     Hours     Required     Unit or subject name     Learning     Evaluation       Learning     Outcomes     Image: Comparison of the introduction     Image: Comparison of the introduction	67. C	ourse S	Structure	ge of practical methods	ior managing the	z apiary.				
Learning Outcomes     method     method       1     5     Initial knowledge     the introduction Development and about bees     Lecture     Quiz	Week	Hours	Required	Unit or subject name	Learning	Evaluation				
Outcomes     Interfect     Interfect       1     5     Initial     the introduction       knowledge     Development and     Lecture       about bees     breeding of bees and			Learning		method	method				
1     5     Initial knowledge Development and about bees breeding of bees and     Lecture     Quiz			Outcomes							
knowledge Development and about bees breeding of bees and	1	5	Initial	the introduction	Lecture	Quiz				
about bees breeding of bees and			knowledge	Development and		-				
			about bees	breeding of bees and						
signed by the animal				signed by the animal						
kingdom and its				kingdom and its						
types				types						

			Taxonomic position		
			of bees in the animal		
			kingdom		
			Beekeeping in Iraa		
			Broads of boos in Irog		
2	5	Vnoviladaa	The best beels in fidy	Lecture	quiz
2	5	knowledge	areas in Irag	Lecture	quiz
		areas and life	Sources of pectar and		
		behavior	pollen		
		bellavioi	The life behavior of		
			honey bees		
			The life cycle of honey		
			bees		
			mating behavior		
			egg laying behavior		
3	5	Know the	Periods of immature	Lecture	quiz
		divisions	roles for honeybees		
		and ages of	larval stage		
		the bee	virgins stage		
		insect	adult stage		
			Formal traits between		
			queens, workers, and male		
4	5	Knowing	The economic	Lecture	quiz
		the	importance of		
		economic	beekeeping		
		importance	Honey and its benefits		
		of	Royal food and its		
		beekeeping	benefits		
			Wax and its benefits		
			Pollen and its benefits		
			bee venom and its		
			Propolis and its benefits		
5	5	Know the	Honoy has brood	Lecture	auiz
5	5	kilow the	production	Looture	quil
		of moting	Production Economical plant		
		or d lavin a			
		and laying			
		eggs	Production of		
			tertilized queens and		
			aivisions		
			business of		
			individuals		
			Queen's business		
	-		Housework work	-	
6	5	Knowing	The work of the field	Lecture	quiz
		the work	workers		
		of the	collect nectar		
		workers	pollen collection		
		throughout	Pollen collection		

		the vear	mechanism		
		Juie year	collecting water		
			water use		
,	5	Learn	External anatomy of a	Lecture	quiz
		about the	honey bee		1
		external	The head and its		
		anatomy of	appendages		
		a honey	The chest and its		
		bee	appendages		
		bee	The abdomen and its		
			appendages		
			the Queen		
			female kingdom		
			Eactors affecting the		
			construction of royal		
			houses		
			Queen production		
			supplies		
			Conditions of the pappy		
			sect		
			Breeding of virgin		
			queens		
			queen production		
3	5	Learn	robbery	Lecture	quiz
		about the	industrial feeding		1
		methods	nutrition purposes		
		and	Signs of a nutritional		
		purpose of	deficiency		
		artificial	types of nutrition		
		feeding	Important notes on		
		recuing	nutrition		
			Feeding times and		
			concentrations of		
			nutrient solutions		
			types of food		
)	5	Recognize	natural reproduction	Lecture	quiz
		the	(scattering)		1
		tranning	When does expulsion		
		and ways	happen?		
		to prevent	Reasons for the		
		to provent	occurrence of swarming		
			swarming damage		
			spurting marks		
			Methods of preventing		
			swarming		
10	5	Identifying	late swarming	Lecture	quiz
-	-	late narcels	expulsion and		-1
		and wave	substitution		
		to keen	Keening and housing		
		narcels	narcels		
	1	parcers	purcos	1	

			holding Division of sects The stages of producing good denominations		
11	5	Learn about honey sorting and packing tools	honey sorting tools Honey sorting tools from modern cells excretions honey filter Packing tools after sorting	Lecture	quiz
12	5	Learn how to sell honey and packaging	packing containers Honey discs and strips Sorting honey from municipal cells Honey sorting for amateurs and beginners Auxiliary tools for the screening process	Lecture	quiz
13	5	Knowing the locations of the beekeepers and the work of the beekeeper	Apiaries sites disintegrated The work of the beekeeper during the months of the year Actions that honey bees do themselves Dispersal measures taken by the beekeeper Biological and nutritional status of cells before and after dispersal Indoors in the basement Cell dispersal materials	Lecture	quiz
14	5	Identify diseases and pests of bees	bee pest diseases brood diseases American brood rot disease Nosemia disease bee paralysis Deformed wings virus	Lecture	quiz
15	5	Learn about some bee pests	Varroa disease Wax moths Great Wax Moth Minor wax moth red hornet Abi Khudair bird	Lecture	quiz
68.	Course	e Evaluation			

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

70.	Cou	rse Name:				
Comput	ter appli	cations 1				
71.	Cou	rse Code:				
AFC19	33					
72.	. Semester / Year					
First/ 2	023-202	24				
73.	Des	cription Preparation Date:				
2024/1	/25					
74.A	vailable	Attendance Forms:				
P	ersonal p	resence				
75.N	umber of	f Credit Hours (Total) / Number of Units (Total)				
30	)/1 (pra	ctical only)				
76. n	Cou ame)	Irse administrator's name (mention all, if more than one				
N	ame: Ass	st. Pro. Dr. Ahmed Abdulrahman Majid				
E	mail: <u>ag.a</u>	hmed.abd-rahmman@uoanbar.edu.iq				
77.	Cou	rse Objectives				
Course O	bjectives	1. Learn about computer terms and definitions				
		2. University degree in computer history and language				
		3. Knowing the computer's components, types, and uses.				
		4. Entering the world of viruses and knowing how to benefit from them on				
		the computer.				
		5. Working on the computer through the Windows interface				
78.	Tea	ching and Learning Strategies				
Strategy	Knowledg	<b>te and understanding</b> ut the capabilities of printing, inserting images, tables, storing, and writing formatting.				
	Subject-sp Students c	an develop skills by gaining sufficient experience to produce Microsoft Word files in a				
	Teaching	and learning methods:				
	The stude	nt relies for his understanding and learning on in-person lectures during this academic				
	year <b>Evaluatio</b>	n methods:				
	Through daily and monthly exams, homework, oral exams, attendance, and various activities					
	<b>thinking skills:</b> The student relies on linking the topics of the lectures in order to provide a model answer the					
	can benefit him in the monthly exams.					
	General a	and transferable skills (other skills related to employability and personal ent).				
	The student the curricu	nt can study the curriculum topics in a practical way to understand and comprehend flum lectures through his visit to the laboratory.				
79. Cou	urse Stru	cture				

		Required			Learning	Evaluation
Week	Hours	Learning	Unit or sub	oject name	method	method
		Outcomes				
1	3		Computer basics		(theoretical)	Daily exam
2	3		Electronic comp	uter (computer)	(theoretical)	Daily exam + homework
3	3		Classification of co operating	omputers based on g system	(theoretical)	Daily exam + homework
4	3		Computer's o	components	(theoretical)	Monthly exam
5	3		Compu	ter box	(theoretical)	Daily exam
6	3		Poi	rts	(theoretical)	Daily exam + homework
7	3		Number	systems	(theoretical)	Daily exam + homework
8	3		Computer securi licer	ty and software uses	(theoretical)	Monthly exam
9	3		Electronic hacking		(theoretical)	Daily exam
10	3		Operating Systems		(practical)	Daily exam + homework
11	3		Windows oper	rating system	(practical)	Daily exam + homework
12	3		Task	bar	(practical)	Monthly exam
13	3		Performing operat	ions on windows	(practical)	Daily exam
14	3		control	Board	(practical)	Daily exam + homework
15	3		Add an a	account	(practical)	Daily exam + homework
16	3		Installing	programs	(practical)	Monthly exam
80. 0	Course E	Evaluation				
Monthly	v exam 60	)%, daily exa	m 20%, homewo	ork 10%, attend	ance 10%.	
81. L	earning	and Teach	ing Resources			
Required	Required textbooks (curricular books, if any)			Computer app	lications book N	licrosoft Word
Main references (sources)			My practical experi	ence is in the comput	ter field	
Recomm	Recommended books and references			-		
(scientifi	c journals	, reports)				
Electronic References, Websites				-		

1 Course No							
Applic	Applications of Computer?						
2. Course	e Cod	le:					
AFC1947	tor /	Veen					
5. Series		rear:					
First Se	emes	ster/2023-2024					
4. Descri	ptior	n Preparation Dat	e:				
25/1/2024							
5. Availat	ble A	ttendance Forms:					
in-pers	son l	earning					
6. Numbe	er of (	Credit Hours (Tota	al) / Num	ber of Un	its (Total)		
30/1 (p	pract	cical only)		: II . : f			
7. Course		ministrators nam	<u>ie (ment</u>	ion all, li	more than or	ie name)	
Fmail:	$2\sigma h$	ilal vaseen@lloar	har edu	ia			
8. Course	e Obj	ectives		<u></u>			
Course Objectiv	/es			A-Ability	y to understand	the principle	
-				of Excel program.			
				B-Increasing the skills of students			
				for using it to solve the problems.			
				C-Ability	the undergrad	luate students	
				to use the	ese skills in dif	ferent fields.	
				D-Ability	inequalities and all function		
		ad Loorping Strate	gioa	equations	s, mequanties a		
9. Teachin	ng ar		gies			1 11	
Strategy	A	Analysis the data	a and und	erstand h	ow can you be	ability to	
	ap A	ply it by using the 2 Testing these eq	equation	s of exce	l program. tical experime	ntal	
	A	3. Using equations	to find g	reat data	for different va	ariables with	
	sii	mple way and which	ch spend	less time	and effort.	1 1. 1	
	A <sup>2</sup>	d graph it.	intable co	ordinates	and scales in t	ne problems,	
	A.	5. Ability of studer	nt to eval	uate the p	oroblems, and v	writing the	
	scientific reports.						
A6. The student can acquire the practical and scientific experience							
10. Course S	his specialized field it.						
Week Ho	ours	Required	Unit or s	ubject	Learning	Evaluation	
		Learning	name		method	method	

		Outcomes			
First	2	definition and important of Microsoft excel 2010	introduction of Microsoft excel 2010	by computer	questions, discussions, and examples
Second	2	methods of operating Microsoft excel 2010	operating Microsoft excel 2010	by computer	questions , discussions, and examples
Third	2	Definition the groups in file tab. (save, save as,)	file tab	by computer	questions , discussions, and examples
Fourth	2	Definition the groups in home tab (clipboard, font, number,)	home tab	by computer	questions , discussions, and examples
Fifth	2		Exam of	f first month	
Sixth	2	Include the groups (themes, page setup, select to fit)	page layout tab	by computer	questions , discussions, and examples
Seventh	2	Definition the groups in insert tab (tables, charts, spark lines,)	insert tab	by computer	questions , discussions, and examples
Eighth	2	Definition the groups in insert tab (filter, links, text, symbols,)	insert tab	by computer	questions , discussions, and examples
Ninth	2	Include the groups (function library, defined names, calculations,)	formula tab	by computer	questions , discussions, and examples
Tenth	2		Exam of s	second month	
Eleventh	2	application of equations in formula bar	formula tab	by computer	application of equations in formula bar
Twelfth	2	Definition the groups in review tab (proofing, language, comments,)	Review tab	by computer	Definition the groups in review tab (proofing, language, comments,)
Thirteenth	2	Definition the groups in view tab (workbook views,	View tab	by computer	Definition the groups in view tab (workbook

		show, zoom, window)					views, s zoon windo	how, n, ow)
Fourteenth	2	applications for all tabs	review	w for all tabs	app fo:	plications r all tabs	applicat for all	tions tabs
				Exam of th	ne thi	rd month		
11. Cou	irse Eva	luation						
Practical ( Final degr	Quiz 109 ee from	%, Practical exam 4 100%.	40%,	final exam (	Pract	tical only)	50%.	
12. Lea	rning ar	nd Teaching Resou	urces					
Required textbooks (curricular books, if any)				"Essentials of computers and library applications", Pro.Dr. Zaid Mohamed Abood, Pro.Dr. Gasan Hameed, vol.3, 2010			brary amed vol.3,	
Main referei	nces (sou	ırces)		Practical applications by excel program				ograr
Recommended books and references (scientific				Essentials	of	compute	rs and	libra
journals, reports) applications								
Electronic R	Electronic References, Websites Microsoft Internet websites							

13. Course l	Name:				
Applications of Computer3					
14. Co	ourse Code:				
AFC1929					
15. Se	emester / Year:				
First Ser	mester/2023-2024				
16. De	escription Preparation Date:				
25/1/2024					
17.Availabl	e Attendance Forms:				
in-perso	on learning				
18.Number	of Credit Hours (Total) / Nun	nber of Units (Total)			
30/1 (pr	cactical only)				
19. C	ourse administrator's name	e (mention all, if more than one			
name)		-			
Name: A	Asst. Pro. Dr. Ahmed Abdulra	hman Majid			
Email: aş	g.ahmed.abd-rahmman@uoanbar.edu.iq	l			
20. Co	ourse Objectives				
Course Objective	S	<ul> <li>A-Ability to understand the principle of Excel program.</li> <li>B-Increasing the skills of students for using it to solve the problems.</li> <li>C-Ability the undergraduate students to use these skills in different fields.</li> <li>D-Ability the students to graph equations inequalities and all function.</li> </ul>			
21. Te	eaching and Learning Strategi	es			
Strategy	rategyA1 Analysis the data and understand how can you be ability to apply it by using the equations of excel program. A2. Testing these equations in the practical experimental. A3. Using equations to find great data for different variables with simple way and which spend less time and effort. A4. Ability to use suitable coordinates and scales in the problems, and graph it. A5. Ability of student to evaluate the problems, and writing the scientific reports. A6. The student can acquire the practical and scientific experience his specialized field it.				
22. Course St	ructure				

Week	Hours	Required	Unit or subject	Learning	Evaluation
		Learning	name	method	method
		Outcomes			
First	2	definition and important of Microsoft excel 2010	introduction of Microsoft excel 2010	by computer	questions , discussions, and examples
Second	I2methods of operating excel 2010operating Microsoft 201		operating Microsoft excel 2010	by computer	questions , discussions, and examples
Third	2	Definition the groups in file tab. (save, save as,)	file tab	by computer	questions , discussions, and examples
Fourth	2	Definition the groups in home tab (clipboard, font, number,)	home tab	by computer	questions , discussions, and examples
Fifth	2		Exam of	f first month	
Sixth	2	Include the groups (themes, page setup, select to fit)	page layout tab	by computer	questions , discussions, and examples
Seventh	2	Definition the groups in insert tab (tables, charts, spark lines,)	insert tab	by computer	questions , discussions, and examples
Eighth	2	Definition the groups in insert tab (filter, links, text, symbols,)	insert tab	by computer	questions , discussions, and examples
Ninth	2	Include the groups (function library, defined names, calculations,)	formula tab	by computer	questions , discussions, and examples
Tenth	2		Exam of s	second month	
Eleventh	2	application of equations in formula bar	formula tab	by computer	application of equations in formula bar
Twelfth	2	Definition the groups in review tab (proofing, language, comments,)	Review tab	by computer	Definition the groups in review tab (proofing, language, comments,)

Thirteenth	2	Definition the groups in view tab (workbook views, show, zoom, window)	V	/iew tab	by computer	Definition the groups in view tab (workbook views, show, zoom, window)	
Fourteenth	2	applications for all tabs	review	w for all tabs	applications for all tabs	applications for all tabs	
				Exam of th	ne third month		
23. Cou	irse Eva	lluation					
Practical (	Quiz 109	%, Practical exam	40%,	final exam (Practical only) 50%.			
Final degr	ee from	100%.					
24. Lea	rning ar	nd Teaching Resou	urces				
Required textbooks (curricular books, if any)				"Essentials of computers and library applications", Pro.Dr. Zaid Mohamed Abood, Pro.Dr. Gasan Hameed, vol.3, 2010			
Main references (sources)				Practical applications by excel program			
Recommended books and references (scientific				Essentials	of compute	ers and libra	
journals, reports)				applications			
Electronic R	eference	s, Websites		Microsoft Internet websites			

25. Cou	rse Na	me:						
Арр	Applications of Computer4							
26.	Cour	rse Code:						
AFC1931	AFC1931							
27.	Sem	ester / Year:						
First	Seme	ster/2023-2024						
28.	Desc	ription Preparation	on Date:					
25/1/2024	ŀ							
29.Ava	ilable A	Attendance Forms:						
in-p	erson	learning						
30.Nur	nber of	Credit Hours (Tota	al) / Num	ber of Un	its (Total)			
30/	1 (prac	tical only)						
31.	Cou	rse administrator	's name	(mentior	all, if more th	han one		
nan	ne)							
Nan	ne: Dr.I	Bilal Yaseen Tahei	r					
Ema	ail: ag.b	oilal.yaseen@Uoar	nbar.edu	.iq				
32.	Cour	se Objectives						
Course Obje	ectives			A-Ability of Excel B-Increas for using C-Ability	y to understand program. sing the skills of it to solve the	l the principle of students problems.		
				to use the D-Ability equations	ese skills in dif the student s, inequalities a	ferent fields. ts to graph and all function		
33.	Teac	hing and Learning	Strategie	es				
StrategyA1 Analysis the data and understand how can you be ability to apply it by using the equations of excel program. A2. Testing these equations in the practical experimental. A3. Using equations to find great data for different variables with simple way and which spend less time and effort. A4. Ability to use suitable coordinates and scales in the problems, and graph it. A5. Ability of student to evaluate the problems, and writing the scientific reports. A6. The student can acquire the practical and scientific experience his specialized field it.								
34. Cours	e Struc	ture						
Week	Hours	Required	Unit or s	ubject	Learning	Evaluation		

		Learning	name	method	method
		Outcomes			
First	2	definition and important of Microsoft excel 2010	introduction of Microsoft excel 2010	by computer	questions , discussions, and examples
Second	2	methods of operating Microsoft excel 2010	ods of ating osoft 1 2010		questions , discussions, and examples
Third	2	Definition the groups in file tab. (save, save as,)	file tab	by computer	questions , discussions, and examples
Fourth	2	Definition the groups in home tab (clipboard, font, number,)	home tab	by computer	questions , discussions, and examples
Fifth	2		Exam of	f first month	
Sixth	2	Include the groups (themes, page setup, select to fit)	page layout tab	by computer	questions , discussions, and examples
Seventh	2	Definition the groups in insert tab (tables, charts, spark lines,)	insert tab	by computer	questions , discussions, and examples
Eighth	2	Definition the groups in insert tab (filter, links, text, symbols,)	insert tab	by computer	questions , discussions, and examples
Ninth	2	Include the groups (function library, defined names, calculations,)	formula tab	by computer	questions , discussions, and examples
Tenth	2		Exam of s	second month	
Eleventh	2	application of equations in formula bar	formula tab	by computer	application of equations in formula bar
Twelfth	2	Definition the groups in review tab (proofing, language, comments,)	Review tab	by computer	Definition the groups in review tab (proofing, language, comments,)
Thirteenth	2	Definition the groups in view tab	View tab	by computer	Definition the groups in view

		(workbook views, show, zoom, window)					tab (wo views, zoo wind	rkbook show, m, ow)
Fourteenth	2	applications for all tabs	review	w for all tabs	app for	lications all tabs	applica for all	ations l tabs
				Exam of th	ne thir	d month		
35. Cou	irse Eva	lluation						
Practical ( Final degr	Quiz 109 ee from	%, Practical exam 4 100%.	40%,	final exam (	Pract	ical only)	50%.	
36. Lea	rning ar	nd Teaching Resou	urces					
Required te	xtbooks (	curricular books, if ar	v)	"Essentials application Abood, Pro 2010	of s", P o.Dr.	computers Pro.Dr. Za Gasan H	s and l iid Mol ameed,	ibrary named vol.3,
Main referei	nces (sou	irces)		Practical a	pplic	ations by	excel p	orograr
Recommended books and references (scientific				Essentials	of	compute	rs and	l libra
journals, rep	oorts)			application	S			
Electronic R	eference	s, Websites		Microsoft In	terne	t websites	5	

13-	Course N	Course Name							
Princi	ples of agricult	ural economics							
14-	14- Course Code								
AFC1	AFC1937								
15-	Semester	r / Year:							
2023_2	2024								
16-	Descripti	on Preparation	Date: spring						
25-1-2	024								
17-	Available	Attendance For	ms: Direct						
Assista	nt Professor. I	Eyid Abbas Ab	dalltef						
18-	Number of	of Credit Hours (	Total) / Number of U	Jnits (Total)	):				
	0/1 (practical	only)							
19-	Course a	administrator's	name (mention all,	if more that	an one				
I	name)								
20-	Course O	bjectives							
Course	Objectives	Α	- Providing the student v	with the basic	principles of				
C- Intro and spec	ducing the most cializations of agri	important branc B cultural economi a	- Introducing students to ctivities and functions ca conomy	to the most im arried out by	portant econom the agricultura				
21-	Teaching	and Learning St	trategies						
Strategy	,	5- Providing stu	udents with theoretic	al and pract	ical				
		scientific kno	owledge on the subje	ect of Fiber	Crops				
		of all kinds.	6 5		1				
		6- Students ben	afit from practical as	vnariancas i	n the subject				
		Eihar Crons	and its relationship		n the subject				
		Fiber Crops		lo various gi	towin				
		factors and	the conditions surrou	inding the p	lant.				
22- Co	ourse Structure								
Week	Hours	Unit name /	Unit or subject	Learning	Evaluation				
		course or	name	method	method				
		topic			moniou				
		agricultural							
		Britanu							

		economics			
1	5(2theory+ practical)	Economics, the most important basic branches, and the relationship of agricultural economics to it	Fiber Crops	Giving lectures (theoretical and practical) (e- learning)	Daily and monthly test + scores on activities, reports and attendance
2	5	The most important branches of agricultural economics and the economic problem and its characteristics	Fiber Production		
3	5	The role and status of agricultural economic activity + aspects of economic life	Fiber Classification		
4	5	Economic resources, invested capital and agricultural costs	Cotton		
5	5	Analysis of agricultural costs + agricultural income	Cotton Cultivars		
6	5	Economics of agricultural production production function and types	Cotton Flowering		
7	5	Exam	Cotton Bolls &Seeds		first month
8	5	stages of agricultural production	Cotton Fiber or Lint		
9	5	The isoquant curve, its properties, and how to draw it	Cotton Ecology		
10	5	Replacement or replacement and reaching the lowest cost	Plant Density of Cotton		
11	5	Agricultural prices and types of fluctuations	Management of Cotto		

12						<u></u>
	5	The demand for agricultural products, its concept, factors affecting it, and the demand schedule and	Picking of	Cotton		
10	5	CUIVE	<b>F</b> 1			
13	5	agricultural products, its concept, the factors affecting it, and the supply schedule and curve	Fiax			
14	5	The interaction of demand and supply in setting prices	Fertilization Retting of	on , Harvest : Flax		
15	5	Exam	Natural Flax	Properties		second month
						exam
23- Cou	urse Evaluati	on	L			<u> </u>
I-Weekly	exams (quiz	) and quarterly a	nd final e	exams (theo	retical and	practical)
<ol> <li>Weekly</li> <li>Interact</li> <li>Attenda</li> <li>Commi</li> <li>Preparin</li> </ol>	exams (quiz tion within th ance. tment and di ng scientific	) and quarterly a ne lecture. scipline in the cl reports and prese	nd final e assroom enting the	exams (theo and laborat em with scie	retical and ory. entific expl	practical). anations.
<ol> <li>Weekly</li> <li>Interact</li> <li>Attenda</li> <li>Commi</li> <li>Preparin</li> <li>24- Lea</li> </ol>	exams (quiz tion within th ance. tment and di ng scientific	) and quarterly and lecture. scipline in the clareports and prese	nd final e assroom enting the es	exams (theo and laborate em with scie	retical and ory. entific expl	practical). anations.
<ul> <li>1-Weekly</li> <li>2- Interact</li> <li>3- Attenda</li> <li>4- Commi</li> <li>5- Prepari</li> <li>24- Lea</li> <li>Required</li> <li>A - Cou</li> <li>B - othe</li> <li>C - lecture</li> </ul>	exams (quiz tion within th ance. tment and di ng scientific rrning and Te readings: Irse book er books Ires	) and quarterly a ne lecture. scipline in the cl reports and prese eaching Resourc	nd final e assroom enting the es	exams (theo and laborate m with scie * Agricult Abdel Wa in 1980. * Agricult Salem Tav * Agricul and pract	ory. entific expl cural Econo hhab Mata tural Econo wfiq Al-Na tural econo ice Dr. Raa Atabi 201	practical). anations. mics - Dr. r Al Dahery omics - d. jafi 1995. omics theory ad Aidan Al- 8.
<ol> <li>Weekly</li> <li>Interact</li> <li>Attenda</li> <li>Commi</li> <li>Prepari</li> <li>Prepari</li> <li>Z4- Lea</li> <li>Required I</li> <li>A - Cou</li> <li>B - othe</li> <li>C - lectur</li> </ol>	exams (quiz tion within th ance. tment and di ng scientific rning and Te readings: urse book er books ures	) and quarterly a ne lecture. scipline in the cl reports and prese eaching Resourc	nd final e assroom enting the es	exams (theo and laborate em with scie * Agricult Abdel Wa in 1980. * Agricult Salem Tav * Agricul and pract	ory. entific expl cural Econo hhab Mata tural Econo wfiq Al-Na tural econo ice Dr. Raa Atabi 201	practical). anations. mics - Dr. r Al Dahery omics - d. jafi 1995. omics theory ad Aidan Al- 8. the internatio
<ul> <li>1-Weekly</li> <li>2- Interact</li> <li>3- Attenda</li> <li>4- Commi</li> <li>5- Prepari</li> <li>24- Lea</li> <li>Required a</li> <li>A - Cou</li> <li>B - othe</li> <li>C - lecture</li> </ul>	exams (quiz tion within th ance. tment and di ng scientific rning and Te readings: urse book er books ures	) and quarterly a ne lecture. scipline in the cl reports and prese eaching Resourc including, for exa s, software and w	nd final e assroom enting the es es umple, ebsites)	exams (theo and laborate m with scie * Agricult Abdel Wa in 1980. * Agricult Salem Tav * Agricul and pract Wel netw	ory. entific expl cural Econo hhab Mata tural Econo wfiq Al-Na tural econo ice Dr. Raa Atabi 201 osites on work.	practical). anations. mics - Dr. r Al Dahery omics - d. jafi 1995. omics theory ad Aidan Al- 8. the internatio

Field crops insects

2. Course Code:

AFC1926

3. Semester / Year: First/Third

2023\_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Lectures

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

30/1 (practical only)

7. Course administrator's name (mention all, if more than one name) Name: Dhurgham Duraid Farhan

Email: <u>dhurgham.farhan@uoanbar.edu.iq</u>

8. Course Objectives

The field crop insects course aims to introduce students to the insect pests that infect field crop plants and how to identify them through the phenotypic characteristics of these insects. damage using the best technology.

#### 9. Teaching and Learning Strategies

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

10. Co	10. Course Structure										
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation						
		Outcomes	name	method	method						
1	5	<ol> <li>1- Entomology</li> <li>2- class of insects</li> <li>3- Characteristics of a class of insects</li> <li>4- Evolution and Impossibility [</li> </ol>	Knowledge of entomology and identification of the characteristics of the class of insects and the types of evolution	Lecture							

		· · · · · · · · · · · · · · · · · · ·			
		Metamorphosis 5- Insect Orders	in insects		
2	5	Gryllatalpa gryllotalpa Life cycle, damage and control method -2Desert locusts Schistocerca gregaria Life cycle, damage and control method	Biological knowledge, description and damage of the desert locust and carp insects	Lecture	
3	5	-1Ocnogyna loewii -2Microcerotermes diversus Study the life cycle, damage and control method	Knowledge of the outward appearance, lifestyle and damage of spring worms and termites	Lecture	
4	5	1-Eurygaster integriceps -2Haplothrips tritici Study the life cycle, damage and control method	Knowledge of the external appearance, lifestyle and damage of the sun and thrips insects	Lecture	
5	5	<ul> <li>-1Schizaphis</li> <li>graminum</li> <li>-2Oria</li> <li>musculosa</li> <li>-3</li> <li>Syringopais</li> <li>temperatella</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul>	Knowledge of the structure and knowledge of the external shape, lifesty and damage to an inse of wheat, ear breaker and wheat leaf borer	Lecture	
6	5	<ul> <li>-1</li> <li>Anisoplia austriaca</li> <li>-2</li> <li>Zabrus morio</li> <li>-3</li> <li>Phytophaga</li> <li>destructor</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul>	Knowledge of the structure, external appearance, lifestyle and damage of the wheat-making insect, the chewer of wheat seedlings and the Hechian fly.	Lecture	
7	5	-1 Cephus pygmaeus -2Rhopalosiphum (Aphis) maidis Study the life cycle, damage and control	Knowledge of the structure, external shape, lifestyle and damage of the two insects of the Saw- wheat wasp and from	Lecture	

		mathad	the aphid com		]
8	5		the aphia corn	Lastura	
0	5	<ul> <li>Leucania loreyi</li> <li>-2</li> <li>Sesamia critica</li> <li>-3</li> <li>Aphis craccivora</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul>	knowledge of the structure, outward appearance, lifestyle, and damage to cornworms, corn stalk borers, Aphis craccivora	Lecture	
9	5	-1 Therioaphis maculat Hypera fascocinerea Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and the control of my insects from Therioaphis maculate and the Hypera fascocinerea	Lecture	
10	5	<ul> <li>-1 <ul> <li>Aphis fabae</li> <li>-2</li> <li>Bruchus</li> <li>rufimanus</li> <li>-3</li> <li>Bruchidius</li> <li>incarnates</li> <li>-4</li> </ul> </li> <li>Cosmolyce <ul> <li>boeticus</li> <li>-5</li> <li>Phytomysa</li> <li>atricarnis</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul></li></ul>	Knowing the external appearance and symptoms of infection and control each insect of the aphid black bean, the bean beetle, the legume worm and the cowpea leaf border	Lecture	
11	5	<ul> <li>-1</li> <li>Aphis gossypii</li> <li>Clover</li> <li>-2</li> <li>Bemisia</li> <li>gossypipedra</li> <li>(Bemisia tabaci(</li> <li>-3</li> <li>Thrips tabaci Lind</li> <li>Study the life cycle,</li> <li>damage and control</li> </ul>	Knowing the external appearance and symptoms of infection and control each of the cotton bug, cotton white fly and onion thrips	Lecture	

		mathad				
12	5		Know	ing the external	Lecture	
		-10xycarenus hyalinipennis cost -2 Spodoptera Littoralis (Boisd(	appearance and symptoms of infection and control of both the		Lecture	
		Study the life cycle, damage and control method	the co	otton leaf worm		
13	5	<ul> <li>-1</li> <li>Pegomyia</li> <li>hoyoscyami</li> <li>-2Phyllotreta</li> <li>cruciferae</li> <li>-3</li> <li>Myzus persicae</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul>	Knowing the external appearance and symptoms of infection and control each of the beet leaf borer, the cruciferous flea beetle, and the aphid green peach		Lecture	
14	5	<ul> <li>-1</li> <li>Spodoptera</li> <li>(Laphygma) exigua</li> <li>-2</li> <li>Agrotis ipsilon</li> <li>-3</li> <li>Heliothis armigera</li> <li>-4</li> <li>Eris insulana Boisd</li> <li>Study the life cycle,</li> <li>damage and control</li> <li>method</li> </ul>	Knowing the external appearance and symptoms of infection and control each of the green worm, cutworm, American cotton nut worm and thistle		Lecture	
11.	Course I	Evaluation				
12.	Learning	and Teaching Reso	ources			
Require	ed textboo	ks (curricular books, if a	anv)			
Main re	ferences	(sources)	,	Field crop insec Economic Insec	ets / Iyad Yousse ets / Ibrahim Ka	ef Al-Haj Ismail ddouri
Recom	mended	books and refer	rences			
(scienti	fic journals	s, reports…)				
Electro	nic Refere	nces, Websites				

1. Course	1. Course Name:							
Gen	General Mathematics							
2. Course Code:								
AFC1946	AFC1946							
3. Sem	nester /	Year:						
First	t Seme	ster/2023-2024						
4. Des	criptio	n Preparation Dat	e:					
25/1	/2024							
5. Ava	ilable A	Attendance Forms:						
in-p	erson	learning						
6. Nur	nber of	Credit Hours (Tota	l) / Num	ber of Un	its (Total)			
30/	1 (prac	tical only)						
7. Cou	urse ad	lministrator's nam	ie (ment	tion all, if	more than or	ne name)		
Nan	ne: Dr.I	Bilal Yaseen Taher	•					
Ema	ail: <u>ag.b</u>	<u>oilal.yaseen@Uoar</u>	<u>ıbar.edu</u>	.iq				
8. Cou	irse Obj	jectives						
Course Obje	ectives			A-Ability of mathem B-Increas using it to C-Ability to use the D-Ability equations	to understand matical functions ing the skills to solve the pro- the undergrad ese skills in dif the student s, inequalities a	l the principle ons s of students blems luate students ferent fields. ts to graph and all function		
9. Tea	ching a	nd Learning Strate	gies					
StrategyA1. Analysis the problems and understand how can you be ability to solve it. A2. Testing these equations in the practical experimental. A3. Using equations to find variables in the problems. A4. Ability to convert the scales on the real number line. A5. Ability of student to evaluate the problems, and writing the scientific reports. A6. The student can acquire the practical and scientific experience bis specialized field it								
10. Cours	e Struc	ture						
Week	Hours	Required	Unit or s	subject	Learning	Evaluation		
		Learning	name		method	method		
		Outcomes						

		Analysis the				
First	2	problems and understand how can you be able to solve it.	The rate of change function	Theoretical Lectures,white board	questions , discussions, and examples	
Second	2	Ability to use suitable coordinates in the problems.	Cartesian coordinates	on the white bo	questions , discussions, and examples	
Third	2	Ability to use suitable coordinates in the problems.	Increments in coordinates	on the white board, Homewo	questions , discussions, and examples	
Fourth	2	Using slope to find the variables in the problems.	Slope and angles of inclination	on the white bo	questions, discussions, and examples	
Fifth	2	-	Exam of	first month	<b>*</b>	
Sixth	2	special cases of slope of lines	Properties of parallel and perpendicular lines	on the white bo	questions, discussions, and examples	
Seventh	2	Boundary conditions for	Domain and Range of functions	on the white bo	questions, discussions, and examples	
Eighth	2	solving equation of Absolute values and inequalities	Absolute values for equations and inequalities	on the white bo	questions, discussions, and examples	
Ninth	2	solving equations of Exponential and logarithm	Exponential and logarithm functions	on the white bo	questions, discussions, and examples	
Tenth	2	Exam of second month				
Eleventh	2	solving equations of Trigonometric	Trigonometric functions	on the white bo	questions , discussions, and examples	
Twelfth	2	solving equations of Inverse Trigonometric.	Inverse Trigonometric functions	on the white bo	questions, discussions, and examples	
Thirteenth	2	Prove identities of Trigonometric functions	Identities of Trigonometric functions	on the wl board, Homewo	questions, discussions, and examples	
Fourteenth	2	Testing these equations in the practical experimental.	Solve all homework and problems	on the wl board, Homewo and Application by computers	questions , discussions, and examples	
	Exam of the third month					
11. Course Evaluation						
Theory exam 30%, Practical Quiz 10%, Practical exam 10%, final exam 50%.						

Final degree from 100%.								
12. Learning and Teaching Resources								
Required textbooks (curricular books, if any)								
Main references (sources)	Calculus, Thomas, 11Ed, 2006, Addison- Wesley, United States.							
Recommended books and references (scientific	Understanding Basic Calcul							
journals, reports)	S.K.Chung, Wolfram,2007, Ho Kong.							
Electronic References, Websites	https://en.wikipedia.org/wiki/Function_ (mathematics(							
			Course	Deserr				
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1. Cou	rse N	lan	ne:					
Field o	rops	s di	seases					
2. (	Cours	se (	Code:					
AFC19	AFC1937							
3. Sen	neste	r /	Year: Second trime	ster third	stage			
2023_2	2024							
4. Des	cript	cior	Preparation Date:	Contrib	utes to the	knowledge of	plant disease	
25_1_2	2024							
5. Avai	ilable	At	tendance Forms:					
A	Atten	dan	ice					
6. ľ	Numb	er	of Credit Hours (To	tal) / Nur	nber of Uni	ts (Total):		
7	70 Ho	urs						
7. Coi	urse	ad	ministrator's name	(mentic	on all, if mo	re than one r	iame)	
ſ	vame	e: D	r. Theyab A Farhar	l ucenher	u o du i a			
0 (		li d	g.i asiliu_illasili el@	uoandai	.euu.iq			
8. 0	Jours	e	Dojectives					
Course (	Object	ives	5			Identify the i	most important	
						diseases the	mechanism of	
						action of eac	th of them, the	
						differences b	between	
						symptoms an	nd signs, and	
						methods of c	ontrol and	
						resistance to	the disease.	
9. 1	Teach	ning	and Learning Strat	egies				
Strategy		A-I	Knowledge and Understa	anding				
		B-A	A1- The concept of plant	disease	ad hundant di			
		D-/	A3- Studying the most in	nportant p	athogens (fung	seases val. bacterial. vira	l and nematode).	
		E-A	A4- Knowing the most in	nportant di	iseases that aff	fect different cere	al crops	
		F-A	5- Knowing the most in	nportant d	iseases that af	fect oil crops		
		G-A	A6- Knowing the most in	nportant di portant di	iseases that aff	fect fiber crops		
		п-л I-А	8- Finding the best mean	ns to comb	at these diseas	se		
10. Co	ourse	Str	ructure					
Week	Hour	s	Required Learning	Unit or s	ubject	Learning	Evaluation	
			Outcomes	name		method	method	
	_		Introduction to plant					
1	5		diseases			Lecture	quiz	

2	5	Wheat diseases	Lecture	quiz	
3	5	Barley diseases	Lecture	quiz	
4	5	Rice diseases	Lecture	quiz	
5	5	Maize diseases	Lecture	quiz	
6	5	Sorghum diseases	Lecture	quiz	
7	5	Sesame diseases	Lecture	quiz	
8	5	Sun flower diseases	Lecture	quiz	
9	5	Diseases of sugar crops	Lecture	quiz	
10	5	Flax diseases	Lecture	quiz	
11	5	Cotton diseases	Lecture	quiz	
12	5	Bean diseases	Lecture	quiz	
13	5	Alfa alfa Diseases	Lecture	quiz	
14	5	Tobacco diseases	Lecture	quiz	
11.	Course	Evaluation			
12.	Learnin	g and Teaching Resources			
Required textbooks (curricular books, if any) Books and scientific research specialized plant pathology					
Main re	ferences	(sources)	Diseases of field crops. 1993. Sergeant A Hamad, Maysir Gerges, Kamel Salman		

13. Course Name:					
Crimes of the former Baath regime / AL Baath Crimes					
14. Course Code:					
AFC1952					
15. Semester / Year:					
SEMESTER 2023_2024					
16. Description Preparation D	ate:				
25/1//2024					
17.Available Attendance Forms:					
Presence					
18.Number of Credit Hours (Total) / 2	Number of Units (Total)				
30 hours 2 units per week					
19. Course administrator's na	ame (mention all, if more than one name)				
Name: mohammed kareem shak	er				
Email: ag.mohammed.kareem@	uoanbar.edu.iq				
20. Course Objectives					
1-Preparing educated students with correct	3- Helping in writing scientific research objectivel				
Ideas 2- Instilling noble values and morals	4– Know the facts and not falsify them				
0	5- Knowing the repressive methods used by the				
	former regime				
21. Teaching and Learning Stra	ategies				
Strateg 1- Enabling students to obtain t	he intellectual framework				
2- Preparing students with a co	rrect culture				
3- Instilling and preserving the	principles of patriotism				
4- Developing the intellectual s	ide of students				
5- Vocabulary formulation and	its absence				
6- Expanding cognitive awaren	ess				
22. Course Structure					

Outcomesnamemethodmethod12Understanding an learningViolation of rights a freedomsMy presencethe exar My presence32skills developmen skills developmenA descriptive overvie of political systems The Baathist regime's violation of rights and freedomsMy presencethe exar My presence42Know the facts principlesThe Baathist regime's violation of rights and freedomsMy presencethe exar My presence62principles awarenessThe impact of the behavior of the forme Baathist regime on the societyMy presencethe exar My presence92Learn high values raising awarenessBaathist regime on the societyMy presencethe exar My presence102raising awareness perceptionThe impact of the transitional period The psychological fiel the social fieldMy presencethe exar My presence132Crystallization of the exar Religion and stateReligion and stateMy presencethe exar	ım Im
12Understanding an learningViolation of rights a freedomsMy presencethe exar My presence22learning 	ım Im
15 2 Mind developmen Learn the facts Brief and learn Discrimination Understanding an perception The right style	
23. Course Evaluation	

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

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

1 0				•				
1. Cou	irse Nar	ne:						
Arabic	;							
2.	Course (	Code:						
BRAL1	.04							
3. 3	Semeste	er / Year:						
SEME	SEMESTER 2023_2024							
4. ]	Descript	tion Preparation Da	ite:					
25/1//2	2024							
5. 4	Availabl	e Attendance Forms	•					
]	Presenc	e						
6. ]	Number	of Credit Hours (Tot	tal) / 1	Number of Uni	ts (Total)			
7	30 hour	s 2 units per week	mo (n	oontion oll if r	more then on			
7. Course administrator's name (mention all, if more than one name)								
Email: ag.mohammed.kareem@uoanbar.edu.ig								
8. Course Objectives								
1- Preparing students, including the Arabic <b>3–Assistance in writing scientific research in</b>								
languag 2- Instil	ge Iling tho y	values of the Arabic lan		objective Arabic				
the hea	rts of stu	dents	iguage	4- Familiarity w	vith Arabic lang	uage vocabulary an		
				correct spelling	I			
				5- Knowing the	e common mist	akes		
9	Teaching	g and Learning Strat	egies					
Strateg	1- Enat	oling students to ob	tain t	he intellectual	framework f	or the Arabic		
	languag	ge subject						
	2- Prep	aring students ling	uistic	ally and educa	tionally			
	3- A so	lid knowledge of the te Arabic vocabulary	Arab	ic language voo	cabulary that e	enables the student		
	4- Avoi	d spelling mistakes						
	5- Corr	ect pronunciation o	of som	ne vocabulary				
	6- Expa	inding cognitive aw	arene	ess				
10. Co	ourse St	ructure						
Week	Hours	Required Learning	Unit	or subject	Learning	Evaluation		

		Outcomes	name	method	method
1	2	Understanding an	Sections of speech	My presence	the exam
2	2	learning	punctuation marks	My presence	the exam
3	2	skills developmen	Common linguistic	My presence	the exam
4	2	Correct spelling	errors	My presence	the exam
5	2	Know the errors	The difference	My presence	the exam
6	2	Knowledge and	between dha and	My presence	the exam
7	2	awareness	dha	My presence	the exam
8	2	Learn to parse	Solar and lunar lar	My presence	the exam
9	2	Learn to parse	The simple and	My presence	the exam
10	2	Knowledge and	marbuta tā'	My presence	the exam
11	2	perception	Number and numb	My presence	the exam
12	2	Learn Arabic	Suspicious actions	My presence	the exam
13	2	Proper	Imperfect verbs	My presence	the exam
14	2	pronunciation	The subject and th	My presence	the exam
15	2	Learn the	predicate	My presence	
		differences	Sound feminine		
		Brief and learn	plural		
		Discrimination	Sound masculine		
		Understanding an	plural		
		perception	The parsing		
		The right style	Discrimination		
			Exception		
11. 0	Course E	Evaluation			
1- Thro	ugh daily	and monthly exams, h	omework, oral exams,	attendance, and	l class activities.
12. L	earning	and Teaching Reso	ources		
Required	d textbool	ks (curricular books, if a	any)		
Main ref	erences (	(sources)	Arabic	language boo	oks
Recomm	nended	books and refer	ences		
(scientifi	c journals	s, reports)			
Electron	ic Refere	nces, Websites			

25.	25. Course Name								
Land cult	Land cultivation								
26	Cour	so Codo:							
AFC1959	AFC1959								
27	27 Spring semester / Autumn semester								
2023 202	<u>орги</u> Л	ig senies							
2023_202	+ 	1 1 .							
28.	The c	date this	description was prepared is						
$25 - 1 - 202^{2}$	t ilabla A	ttandana	a Forms:						
29.Ava	ning and	d evening	95% morning and 75% evening						
30.Nur	nber of (	Credit H	ours (Total) / Number of Units (Total)	1)					
Five	hours of	of theory	+ practical	-/					
31.	Cour	se admi	nistrator's name (mention all, if m	ore th	an one				
nam	ne)								
Nan	ne: Prof	f. Dr. Om	ar Ismail Mohsen						
32.	Cours	se Objec	tives						
	• Objec	ctives of	the course: We explain to students	the	mportance of				
	unde	rstanding	the factors affecting plants, including	clima	tic and other				
	envir	onmental	conditions, and their relationship mai	nly to	plants, in a				
	seque	ential scie	ntific manner. In addition, we introduce s	student	s to the steps				
	and t	ypes of cu	lture, and future plans to avoid its risks.						
33.	Teac	hing and	Learning Strategies						
Strategy									
34. Cours	e Struct	ture							
Week Ho	urs Re	equired	Unit or subject name	Lear	Evaluation				
	Le	earning		ning	method				
	0	utcomes		met					
				hod					
1									
	2		The first lecture: factors of crop production, f		Daily exam				
theo	2 pretical		The first lecture: factors of crop production, f production and population growth.		Daily exam participation in				
thec prac	2 pretical ptical		The first lecture: factors of crop production, f production and population growth.		Daily exam participation in lesson + writ				
thec prac	2 oretical		The first lecture: factors of crop production, f production and population growth.		Daily exam participation in lesson + writ scientific reports monthly exams				

	practical		
3	2	The third lecture: Factors for increasing productive	
	theoretical	plant density, leaf area, and planting date	
	practical		
4	2	Fourth lecture: Nitrogen fixation and increa	
	theoretical	productivity, land productivity,	
	practical	succession, ecosystems.	
5	2	Fifth lecture: The relationship of energy expende	
-	theoretical	crop productivity, energy calculations	
	practical	cultivating hectares processes to incr	
	r	the efficiency of energy use	
6	2	Sixth lecture: post-harvest losses measuring los	
0	theoretical	percentage and types of losses measure	
	practical	reduce losses	
7		Seventh leature: Prenching in eren plants and	
/		sevenui lecture. Branching in crop plants and	
	theoretical	here the forter of emergence in	
	practical	branching, factors of emergence in c	
		plants, the root and the root environment	
8	2	Eighth lecture: Land detects, distribution of pl	
	theoretical	according to climate, extents of horizd	
	practical	expansion of land cultivation, steps	
		horizontal agricultural expansion in the A	
		world.	
9	2	Ninth lecture: Cultivation of lands	
	theoretical	topographical defects, crops suitable for	
	practical	reclamation period, cultivation of clay, s	
	-	limestone, and gypsum lands with biolog	
		defects.	
10	2	Tenth lecture: Evidence of agriculture, develop	
-	theoretical	of vegetation, plants of desert, sal	
	practical	alkaline, arid and sandy lands	
11	2	Lecture 11: Irrigation and cultivation needs	
11	theoretical	productivity under irrigation	
	practical	relationship of irrigation water to	
	practical	avported yield water stress and soil text	
		expected yield, water stress and soft text	
10		Valer requirements of crops.	
12		Lecture 12: Soll blology and the aqu	
	theoretical	environment, soil horizons and soil ty	
	practical	the relationship of soil depth to its aqu	
		life, fungi and algae in soil.	
13	2	Lecture 13: General notes on land culture,	
	theoretical	tolerant plants, plant tolerance	
	practical	exchangeable sodium, calcium carbo	
		and pH.	
14	2	Lecture 14: Crop service under conditions	
	theoretical	cultivation, irrigation, and salinizat	
	practical	windbreaks in farmland, water and bio	
		in a desert climate, types of trees suitable	
		cultivation in arid areas, the effect	
		windbreak trees on productivity.	
15	2	Lecture 15: Factors of crop production.	
	theoretical	production and population growth.	
	practical	I I I I I I I I I I I I I I I I I I I	

35.	35. Course Evaluation									
Distrib	uting the	score out of	100 according to th	e tasks assigned to t	he stud	ent such as daily				
prepar	ation, dail	y oral, montl	ıly, or written exan	ns, reports etc						
36.	Learning	and Teach	ing Resources							
Required	l textbooks (	methodology, if	any) Land cultivation,	F .						
Dr. Medl	hat Majeed A	Al-Sahuki								
Main ref	ferences (so	urces) - Al-Sah	uki, Medhat Majeed.	19.						
Cultivati	on of degrad	led lands. Colleg	e of Agriculture - Univ	21						
of Baghd			1							
Recomm	ended suppo	orting books an	a references (scientific							
Journais,	reports)	Al-Muaini, T	ad Husseln All and							
foundatio	and Awalu	the manageme	ont production and							
improver	ment of field	d crops Minist	v of Higher Education							
and Scier	ntific Resear	ch. Republic of	rad. p.1							
Ahmed.	Rivad Abd	el Latif. 1984.	Water in plant life. F	Sc						
Directora	ate. Universi	ty of Al Mosul.	raqi Republic. On p. 51	2.						
-Al-Zuba	idi, Ahmed	Haider. 1989.	Soil salinity, theoretica	1						
applied t	foundations,	7th edition. D	ar Al-Hekma, Universi	ty						
Baghdad	. Ministry o	f Higher Educa	ion and Scientific Rese	a						
Iraq. On page 308. 3										
-Al-Awadi, Jassim Muhammad. 2011. Reclamation										
cultivation of saline lands. Our Environment Magazin										
Environn										
Electroni	ic references	, Internet sites								
Required	l textbooks (	methodology, if	any) Land cultivation,	F						
Dr. Medł	hat Majeed A	Al-Sahuki								

1. Course Na	ame:
Field crops	management.
2. Course	e Code:
AFC1962	
3. Semes	ter / Year:
Spring 2023	-2024.
4. Descri	ption Preparation Date:
25.1.2024.	
5. Availa	ble Attendance Forms:
The au	idience.
6. Numbe	er of Credit Hours (Total) / Number of Units (Total)
5 units	s (2 theoretical +3 practical).
7. Cours	e administrator's name (mention all, if more than one name)
Name:	Dr. Muaiad Hadi + Dr. Omer Ismail .
Email:	ag.moaead.hadei@uoanbar.edu.iq
8. Course	e Objectives
Course Objectiv	<b>1-Determining the human role in providing food and population increase and the consequences of increasing the food gap, and productivity factors.</b>
	<ul><li>2-Research on the management of crops scattered in Iraq and the world and the benefit from them and the adaptation of crops in their broad and narrow sense.</li><li>3 -Knowledge of the management of the field crops before and after planting</li></ul>
	and the various agricultural processes accompanying them.
	4-Shed light on the types of irrigation canals and irrigation methods and reduce irrigation losses.
	5-Calculation of plant density and seed quantities according to the crop, the role of plant density in intercepting light and increasing.
	6-Clarifying the role of the main, secondary and rare fertilizers in growth, increasing the yield and symptoms of deficiency of elements on the plant, the relationship of the types of elements to metabolic processes.
	7-Paying attention to adding soil conditioners - using hemp and green manure and adding gypsum and agricultural sulfur to repair saline and saline-alkaline soi
9. Teachi	ng and Learning Strategies
Strategy	1-Providing students with the basics and additional topics related to previous
	learning outcomes of skills, to solve scientific problems.
	2- Asking the students, during the practical laboratories and the field field side,
	grafting, hoeing, soil division and waving.
<u> </u>	

3- Conducting a set of plant and soil tests such as plowing, smoothing, leveling, fertilization methods, irrigation methods, and by the academic staff.4- Students' participation in the actual examinations.

10. Course Structure									
Week	Hou	Required Learning	Unit or	Learning method	Evaluation				
	rs	Outcomes	subject		method				
			name						
1	5	Man and food: food production, population increase, food gap, productivity factors.	Fieldcrops management	Conducting the plowing, watching its specifications and judging it after identifying its defects in terms soil moisture, the size of the soil masses and the distance between the plowing lines.	Conducting d and monthly t through quest about the subjec determine t comprehension				
2	5	Land service: Plowing, its importa depth, and its relationship to the growth of different crops, and its role in eliminating jungles, preparing elements, and increasing water conservation in the Smoothing: The depth of smoothing the machines used for the growth of the crop.	Fieldcrops management	Divide the field and settle for planti the following week. Students can divided into several groups, each group working together to grow a particular crop.	=				
3	5	Dividing the field: leveling the l and its relationship to dividing field and the area of planting boar	field crops management	Cultivation of one or more crops at same date and plant density using methods of prose, stripes, and not recording observations of growth occurrence in subsequent weeks, collecting and categorizing data according to each studied trait of field characteristics of the plant.	=				
4	5	Irrigation Channels: Irriga systems, nature of irrigation strea and irrigation losses from wa according to the method used and method appropriate to the nature the land and the crop.	field crops management	Planting a crop on several dates and recording the data to know the eff of the dates.	=				
5	5	Crop service: planting dates and their impact on calculating the thermal units needed for crop growth, light energy and its relationship to planting date, temperature. The difference in the effect of planting dates for winter summer crops on changing the date of harvest and the amount of harvest.	field crops management	Cultivating a crop with several plant densities and recording the data to know the effect of the densities.	Ξ				
6	5	Plant density and seed quant according to the crop, the role of plant density in intercepting light increasing yield, optimal densities main crops, optimal planting distances for crops planted in lines, how to calculate plant densities and their relationship to the leaf area guide.	field crops management	Cultivation of a crop with several doses of nitrogen and recording da to know the effect of nitrogen Dose.	-				

7	5	Fertilization - the role of	field crops	Cultivation of a crop with several	=
8	5	<ul> <li>main, secondary and rare</li> <li>fertilizers in growth, yield increase</li> <li>symptoms of element deficiency</li> <li>on the plant, the relationship of the</li> <li>types of elements to the</li> <li>metabolic processes in the plant and</li> <li>synthesis of various plant</li> <li>compounds, naming some</li> <li>elements for the plant, and the</li> <li>optimal quantities for the use</li> <li>elements.</li> </ul> Seeds - seed quality, seed quantities	management field crops	doses of (NPK) to compare it with nitrogen fertilization only.	-
		plant densities and their calculations.	management	several different irrigations (5 and 10 days), or every week or two, and record data on growth to know the role of water in this and record the signs of water deficit.	
9	5	Soil improvers - the use of anima and green manure and the a ddition of gypsum and agricult sulfur to repair saline and alkaline saline soils and its relationship to electrical conductivity and pH of the soil solution and the readines the elements for the plant, and the equations for estimating quantities of gypsum and sulfur according to the specifications of soil analysis.	field crops management	Cultivation of two crops with two factors, one of which is the bush removed manually and the other without removal (although a pesticide can be used for comparison and note-taking).	-
10	5	Bush control - the most important common bush herbicide in major crops. Fine bush herbicides. Broadleaf herbicides. Pesticides recommended in Iraq to control weed plants of major crops. weed election.	field crops management	Extracting leguminous plants to study bacterial complexity, node size and rhizobia activity.	-
11	5	Irrigation of crops - the role of water in the dissolution of elements, absorption and plant growth. number of irrigations for the crop the determination of the depth of irrigation and how to calculate it. Water rations for major crops. Calculating the amount of water needed for the field on the farm.	field crops management	Each group of students writes down the percentage of insects and diseases and attempts to diagnose them for each planted crop.	=
12	5	Methods and depth of cultivation scattered cultivation in merows terraces and cultivation in lines and	field crops management	Study of sections of root, stem, flowers, ovaries, pollen grains and embryo sac.	=

		important relationsh growth reflection crop.	ce to the type of crop. nip of the nature of in each method and a on the growth of the			
13	5	Crop ada light, qua duration,	ptation - temperature, lity, intensity and humidity, air	field crops management	Each group of students follows the signs of maturity on the crop and conducts some moisture tests on the seeds and their suitability for harvest.	-
14	5	Control o - the main affect fie prevent t emergence when recomme	of diseases and insects in insect diseases that eld crops and how to hem before their ee and control them they appear and inded pesticides in Iraq.	field crops management	Choosing a research topic about managing a specific crop for each student and writing it according to the teacher's direction	=
15	5	Plant orga plant cell stem, lea harvest appropria estimate to crop. Sto stores and their spect storage of temperatu pesticides yield in to titration of before an	ans and their functions – and its organelles, root, aves, leaf area. Maturity - how to harvest and the time for the crop, the losses from the orage of the yield - type d storage, storages of l grains and conditions and conditions in them such are, humidity and s, methods of drying the the field and in the store, of moisture in the seeds and at storage.	field crops management	Each student presents his report to the students, discusses it and gives it a grade.	=
11. Distrib	Cours	e Evalua	ation out of 100 accordin	ng to the tas	ks assigned to the student	such as daily
prepar	ation, o	laily oral	, monthly, or written	exams, repo	orts etc	, ,
12.	Learn	ing and	Teaching Resource	es		
Require	ed		1-The scientific basis f Dr. Ivad Hussein Al-Mu	or the manager aini and Prof. M	nent, production and improveme Iuhammad Awaid Ghadeer Al-Oba	nt of field crops. iidi.
Textbo	oks		College of Agriculture -	University of A	Anbar, 2018.	Tayoh
(curricular books, if any)2- Introduction to plant Haj Ali Ahmed. Khartou 3- A strategy for manag Noureddine and I. Dr Academic Library. Caire 4- Plant nutrition guide Younis. College of Agric 5- Reclamation and impr Faculty of Agriculture - 6- Production and impr Al-Younes, University of 7- Grain production. M Azhar University, Arab F 9 - Principles of field cr and d. Aladdin Abdul F College of Agriculture - 10- Lectures on crop m			<ul> <li>2- Introduction to plan Haj Ali Ahmed. Khartou</li> <li>3- A strategy for manag Noureddine and I. Dr</li> <li>Academic Library. Cair</li> <li>4- Plant nutrition guide Younis. College of Agri</li> <li>5- Reclamation and imp Faculty of Agriculture -</li> <li>6- Production and imp Al-Younes, University of 7- Grain production. M Azhar University, Arab</li> <li>9 - Principles of field cr and d. Aladdin Abdul College of Agriculture -</li> <li>10- Lectures on crop m</li> </ul>	t physiology. D um . Khartoum ging and irrigat Mohamed Faw o . Arab Republe e. Dr Youssef M culture - Unive provement of de Saba Pasha - A rovement of fie of Baghdad - Co fr. Dr. Abdel Ha Republic of Egy op production. Majeed Al-Jubo University of B aanagement. so	r Mrs. Omar Al-Huwairis and Dr. University Publishing House, 201 ing field crops. NS. Dr Nemat Abo zy Hamed and d. Hani Saber Saud lic of Egypt, 2013. Muhammad Abu Dahi and d. Supporsity of Baghdad, 1988. esert lands. Dr Maher Georgy Na Ilexandria University (first edition ld crops (part one). Abdul Hamid llege of Agriculture, 1993. mid Mohamed Hassanein, Faculty pt 2019. Dr Muhammad Hazal Kazem Al- ouri and d. Conciliator Abdul Raz aghdad, 2014. . Medhat Majeed Al-Sahoki, Colleg	Tayeb 0. del Aziz i. orter Ahmed seem. 1). 2006 . Ahmed y of Agriculture - Baldawi zaq Suhail Al-Na e of

		Agriculture - University of Baghdad, 2012.
Main refere	ences (sourc	
Recommen	ded books	
and	references	
(scientific	journals,	
reports)		
Electronic	Referenc	11 - Lectures and statistics from the cluster network.
Websites		

Principles of agricultural economics								
38. Course Code:								
AFC1945	AFC1945							
39 Spring semester / Autumn semester								
2023 2024								
2025_2024								
40. The date this description was prepared is								
<u>25-1-2024</u>								
41.Available Attendance Forms:								
42 Number of Credit Hours (Total) (Number of Units (Total)	1)							
42. Number of Credit Hours (10tal) / Number of Units (10ta	.1)							
43 Course administrator's name (mention all if m	ore th							
name)								
Name: Assistant Professor. Evid Abbas Abdalltef								
Email:								
44. Course Objectives								
<ul> <li>Objectives of the course: We explain to students</li> </ul>	the	importance of						
understanding the factors affecting plants, including	clima	tic and other						
environmental conditions, and their relationship mail	inly to	plants, in a						
sequential scientific manner. In addition, we introduce	student	s to the steps						
and types of culture, and future plans to avoid its risks.								
45. Teaching and Learning Strategies								
Strategy								
46. Course Structure								
Week Hours Required Unit or subject name	Lear	Evaluation						
Learning	ning	method						
Outcomes	met							
	hod							
1 2 Economics, the most important basic	nou	Daily evan						
theoretical branches, and the relationship of		participation in						
practical agricultural economics to it		lesson + writ						
		scientific report						

					monthly exams	
2	2		The most important branches of			
	theoretical		agricultural economics and the			
	practical		economic problem and its			
3	2		The role and status of agricultural			
3	<sup>2</sup> theoretical		economic activity + aspects of economic			
	practical					
4	2		Economic resources, invested capital			
	theoretical		and agricultural costs			
	practical					
5	2		Analysis of agricultural costs +			
	theoretical		agricultural income			
	practical					
6	2		Analysis of agricultural costs +			
	theoretical		agricultural income			
_	practical					
7	2		Economics of agricultural production			
	theoretical		production function and types			
0	practical		Even			
0	<sup>2</sup> theoretical		Exam			
	practical					
9	2		stages of agricultural production			
,	theoretical		stages et agricultatat production			
	practical					
10	2		The isoquant curve, its properties, and			
	theoretical		how to draw it			
	practical					
11	2		Replacement or replacement and			
	theoretical		reaching the lowest cost			
	practical					
12	2		Agricultural prices and types of			
	theoretical		fluctuations			
13			The domand for agricultural products			
15	theoretical		its concept factors affecting it and the			
	practical		demand schedule and curve			
14	2		The supply of agricultural products, its			
	theoretical		concept, the factors affecting it, and the			
	practical		supply schedule and curve			
15	2		The interaction of demand and supply in			
	theoretical		setting prices			
	practical					
47.	Course E	valuation				
Distrib	uting the	score out of	100 according to the tasks assigned to th	ne stud	ent such as daily	
prepar	ation, dail	y oral, montl	nly, or written exams, reports etc			
48	Learning	and Teach	ing Resources			
40. Leaning and reaching Nesources						

* Agricultural Economics - Dr. Abdel	
Wahhab Matar Al Dahery in 1980.	
* Agricultural Economics - d. Salem	
Tawfiq Al-Najafi 1995.	
*Agricultural economics theory and pract	
Dr. Raad Aidan Al-Atabi 2018.	
Websites on the	
Leave about field studies	
- Learn about held studies	

49. Course Name								
Princip	ole of hor	ticulture						
50.	Со	urse Code:	<u> </u>					
AFC1	AFC1919							
51.	51. Spring semester/Autumn semester							
2023_	2024							
52.	Th	e date this	description was prepared is					
25-1-2	2024							
53.	Available	e Attendanc	e Forms					
	: morning	g and evening	ng, 95% morning and 75% evening					
54.	Number	of Credit H	ours (Total) / Number of Units (Tota	ıl)				
	Five hou	rs of theory	+ practical					
55.	Co	ourse admi	inistrator's name (mention all, if m	nore th	ian one			
	name)							
Name	: Assista	nt Professo	or Ahmeed faehan					
56.	Co	ourse Objec	tives					
	• OI	ojectives of	the course: We explain to students	s the i	importance of			
	ur	nderstanding	the factors affecting plants, including	g clima	tic and other			
	er	vironmental	conditions, and their relationship ma	inly to	plants, in a			
	Se	quential scie	ntific manner. In addition, we introduce	student	s to the steps			
		d types of ou	ulture, and future plans to avoid its risks	otuuont				
57.	le	aching and	Learning Strategies					
Strategy	/							
58. Co	ourse Str	ucture						
Week	Hours	Required	Unit or subject name	Lear	Evaluation			
		Learning		ning	method			
		Outcomes		met				
				hod				
1	2		Electronic lectures and practical application in		Daily evan			
-	theoretical		laboratories and fields		participation in			
	practical				lesson + writ			
					scientific report			
					monthly exams			
2	2 theoretical		Electronic lectures and practical application in laboratories and fields					
1	monoredical							

3			
	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
4	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
5	2	First month exam	
	theoretical		
	practical		
6	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
7	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
8	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
9	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
10	2	Second month exam	
	theoretical		
	practical		
11	2	Electronic lectures and practical application in	
	theoretical	laboratories and fields	
	practical		
12	2	Electronic lectures and practical application in	
12	theoretical	laboratories and fields	
	practical	hubblic and fields	
13	2	Electronic lectures and practical application in	
15	theoretical	laboratories and fields	
	practical	laboratories and fields	
1/		Electronic loctures and practical application in	
14	theoretical	laboratorios and fields	
	medical	laboratories and rields	
15	practical	The interaction of domand and evenly in	
15	2 theoretical	The interaction of demand and supply in	
15	2 theoretical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	2 theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	2 theoretical practical	The interaction of demand and supply in setting prices	
15	2 theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	2 theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
15	theoretical practical	The interaction of demand and supply in setting prices	
<sup>15</sup>	course E	The interaction of demand and supply in setting prices         /aluation	
15 59. Distrib	Course E outing the s	The interaction of demand and supply in setting prices         /aluation         core out of 100 according to the tasks assigned to to	he student such as daily
15 59. Distrib	Course E outing the s	The interaction of demand and supply in setting prices         /aluation         :ore out of 100 according to the tasks assigned to to ral, monthly, or written exams, reports, etc.	he student such as daily
15 59. Distrib prepar	Course E outing the s	/aluation core out of 100 according to the tasks assigned to to to ral, monthly, or written exams, reports etc	he student such as daily
15 59. Distrib prepar 60.	Course E outing the s ration, daily	/aluation core out of 100 according to the tasks assigned to to to and the tasks assigned to to the tasks assigned tasks as	he student such as daily
15 59. Distrib prepar 60. 1- Al-A	Course E outing the s ration, daily Learning	The interaction of demand and supply in setting prices         /aluation         /aluation         core out of 100 according to the tasks assigned to t oral, monthly, or written exams, reports etc         and Teaching Resources         Principles of Horticulture and	he student such as daily
15 59. Distrib prepar 60. 1- Al-A Garder	Course E outing the s ration, daily Learning	The interaction of demand and supply in setting prices         /aluation         core out of 100 according to the tasks assigned to t oral, monthly, or written exams, reports etc         and Teaching Resources         Principles of Horticulture and ering 2017. College of	he student such as daily
15 59. Distrib prepar 60. 1- Al-A Garder Agricu	Course E outing the s ration, daily Learning	The interaction of demand and supply in setting prices         /aluation         core out of 100 according to the tasks assigned to t oral, monthly, or written exams, reports etc         and Teaching Resources         Principles of Horticulture and ering 2017. College of prestry - University of Mosul	he student such as daily
15 59. Distrib prepar 60. 1- Al-A Garder Agricu	Course E outing the s ration, daily Learning Mlaf, I. H. I. n Engine Iture and F	The interaction of demand and supply in setting prices         /aluation         core out of 100 according to the tasks assigned to t oral, monthly, or written exams, reports etc         and Teaching Resources         Principles of Horticulture and ering 2017. College of orestry - University of Mosul. and L T. Shaval Al Alam 2017.	he student such as daily

Fundamentals of horticulture and landscaping.	
College of Agriculture and Forestry - University	
of Mosul	
3- Amin, S. K. M. and N. Khalil 2014. Principles	
Horticulture. College of Agricultural Engineer	
Sciences - University of Baghdad.	
(include forexample workshops, periodicals, IT software)	
- Learn about field studies	

	Course Description Form						
1. Course	Name:						
Organic	chemistry						
1. Cours	1. Course Code:						
AFC1952	2						
2. Ser	nester / Ye	ar:					
2023_20	024 – first s	emester					
3. Des	scription P	reparation Date:					
2024-1-2	25						
4. Av	ailable Atte	ndance Forms:					
Att	endance liv	e (75) (N)					
5. Nu	mber of Cre	edit Hours (75) / Nu	imber of Units (3.5)				
6 Co	urse admir	nistrator's name (I	Or Maher Ahmed	Abed )			
Na	me: Dr. Ma	her Ahmed Abed					
Em	ail:						
7. Co	urse Objecti	ives					
Course Obj	ectives		Explanatio	on of cyclic and	open aphatic		
			compound	S			
			Classificat	ion of active co	mpounds		
			Preparatio	to active group	nic		
			compound	s	lic		
			Naming or	ganic compoun	ds		
8. Tea	aching and	Learning Strategies	;				
Strategy							
9 Cour	se Structure	2					
Week	Hours	Required Learning	Unit or subiect nam	e Learning	Evaluation		
		Outcomes	,,	method	method		
1	2+3	Organic chemistry	Preparation of cyclic acid	- lectures	Daily and quart		
its p - me		- method of work -	Theo. And EXP.	exam			
calc		calculations - drawing of the device					
2	2+3	Organic chemistry	Preparation of alkyl halide	e lectures t Theo, And EXP	Daily and quart		
			- scientific idea - method	of	- Autor		
	work - calculations -						

			drawin	g of the device.				
3	2+3	Organic chemistry	Alcoho experin - metho calcula the dev	Is - purpose of the nent - scientific idea od of work - tions - drawing of ice.	lectures Theo. And EXP.	Daily exam	and	quart
4	2+3	Organic chemistry	Aceton experin - metho calcula the dev First m	e - purpose of the nent - scientific idea od of work - tions - drawing of ice. onth exam	lectures Theo. And EXP.	Daily exam	and	quart
5	2+3	Organic chemistry	review		lectures Theo. And EXP.	Daily exam	and	quart
6	2+3	Organic chemistry	review		lectures Theo. And EXP.	Daily exam	and	quart
7	2+3	Organic chemistry	First m	onth exam	lectures Theo. And EXP.	Daily exam	and	quart
8	2+3	Organic chemistry	Study of aldehyd introdu work - drawin	of the properties of des and ketones - ction - method of calculations - g of the device	lectures Theo. And EXP.	Daily exam	and	quart
9	2+3	Organic chemistry	Prepara acid - p experin reactio calcula the dev	ation of caroxylic purpose of the nent - type of n - method of work - tions - drawing of rice.	lectures Theo. And EXP.	Daily exam	and	quart
10	2+3	Organic chemistry	Prepari of the e of worl	ng esters - purpose experiment - method k - calculations - g of the device	lectures Theo. And EXP.	Daily exam	and	quart
11	2+3	Organic chemistry	Prepari of the e of worl drawin	ng aspirin - purpose experiment - method k - calculations - g of the device.	lectures Theo. And EXP.	Daily exam	and	quart
12	2+3	Organic chemistry	review	0	lectures Theo. And EXP.	Daily exam	and	quart
13	2+3	Organic chemistry	review		lectures Theo. And EXP.	Daily exam	and	quart
14	2+3	Organic chemistry	Second	month exam	lectures Theo. And EXP.	Daily exam	and	quart
15	2+3	Organic chemistry	Review	1	lectures Theo. And EXP.	Daily exam	and	quart
10. Co	urse Evalua	ition						
Distributin preparatio	ng the score	out of 100 accordin monthly. or written	ng to th exams	e tasks assigned reports etc	to the student	such	as d	aily
11. Learning and Teaching Resources								
Required te	extbooks (curi	ricular books, if any)		Organic chemist	ry for agricultu	re col	lege	stude
Main refere	ences (source	s)						
Recommen	ided books	and references (so	cientific	Types of Chemic Retrieved Janua	cal Bonds. Dum	mies.		
journals, re	ports)				iy i, 2021,11011	•		
Electronic F	References, V	Vebsites		-				

61.	61. Course Name:							
Weed I	Weed Biology							
62.	С	ourse Code:						
AFC19	43							
63.	S	emester / Ye	ar: Seasonal / 1 <sup>st</sup> attem	pt				
2023_2	2024							
64.	D	escription Pi	reparation Date:					
25 1/2	2024							
65. <i>I</i>	Availab	le Attendance	e Forms:					
<i>\</i>	Neekly	,						
66.1	Number	of Credit Ho	urs (45) Number	of Units (3)				
75 h.								
67.	name)	ourse admir	histrator's name (menti	ion all, if more t	inan one			
1	Vame:	Ahmed A. Alr	narie					
I	Email: a	ag.ahmed.abdalw	ahed@uoanbar.edu.iq					
68.	С	ourse Objecti	ves					
Course (	Objective	s Stud	dents acquire scientific k	nowledge in cat	egorizing and			
		diag	nosing weeds and know	ing their damag	es.			
		Stud	dents benefit by identify	ing the types of				
		wee	ed, their damages, uses i	n agricultural te	chnology.			
69.	Т	eaching and I	Learning Strategies					
Strategy		1. lecture.						
		2. Explana	tion and clarification.					
		3. Use of e	lectronic means of clari	fication (Data s	how).			
		4. practica	l lessons in agricultura	l fields				
70. Co	ourse S	tructure						
Week	Hours	Required	Unit or subject name	Learning	Evaluation			
		Learning		method	method			
		Outcomes						
		Oral	Introduction in weeds	Oral & power point	Weekly &			
1	5		introduction in weeds	· · · · · · · · · · · · · · · ·	monthly Exam			
2	5	Oral	Weeds is it friend or enemy	Oral & power point	Weekly & monthly Exam			
3	5	Oral	Weed Classification	Oral & power point	Weekly & monthly Exam			
4	5	Oral	Weed Dispersal Methods	Oral & power point	Weekly & monthly Exam			

5	5	Oral		Weed Losses	Oral & power point	Weekly & monthly Exam
6	5	Oral		Allelopathy	Oral & power point	Weekly & monthly Fxam
7	5	Oral	, v	Weed benefit	Oral & power point	Weekly &
8	5	Oral	We	ed distribution	Oral & power point	Weekly &
9	5	Oral	We	ed Competition	Oral & power point	Weekly &
	5	Oral	Solanu	ım elaeagnifolium		Weekly &
10	5		(Silve	erleaf nightshade)	Oral & power point	monthly Exam
11	5	Oral	w	ater hyacinths	Oral & power point	Weekly & monthly Exam
12	5	Oral	Corr	nmon & invasive weed types	Oral & power point	Weekly & monthly Exam
13	5	Oral	Exploitin sustainab	g weeds for le development	Oral & power point	Weekly & monthly Exam
14	5	Oral	Field and operation	l orchards	Oral & power point	Weekly & monthly Exam
15	5	Oral	Field and	l orchards	Oral & power point	Weekly & monthly Exam
71. (	Course I	Evaluation	operation	a detryity		
dailv o	ral. mont	thly. and writte	en exams.	reports etc		
72. L	earning	and Teachir	ng Resou	rces		
Require	Required textbooks (curricular books, if an				., Burgos, N. R., & Weed control: susta ks in cropping syst athan. Molecular bi CRC Press, 2002.	Duke, S. O. ainability, ems worldwide. ology of weed
Main ref	erences	(sources)		Weed Control M and d. Baqer A Higher Educatio Baghdad. 1982.	fethods. Ghanem S Abdul Khalaf Al n and Higher Educ	Saadallah Al-Hass Jubouri. Ministry cation - University
Recommended books and references (scientific journals, reports)				<ul> <li>Control Weed Jubouri and d Faeq Tawfiq Education an Baghdad. 198</li> <li>Weeds and P Salem Hamm Higher Educa</li> </ul>	d. Dr. Baqer Abdulla I. Ghanem Saadalla Chalabi. Ministry of d Higher Education 35. rinciples of control adi Antar Al-Obaid tion, Education Sci	ah Khalaf Al- h Hassawi and Higher - University of Methods. Dr. i. Ministry of ences a. 2009
Electron	ic Refere	nces, Websites	;	www.weed science.com		

73.Course Name:							
Fundamentals of Food Manufacturing							
74.Course Code:							
AFC1957							
75.Semester / Year:							
2023_2024							
76.Description Prepar	ation Date:						
25/1/2024							
77.Available Attendar	nce Forms:						
Mandatory							
78.Number of Credit I	Hours (Total) / Number of Units (Total):						
75 h.							
79.Course administrat	or's name (mention all, if more than one name)						
Name: Dr. Fadwa	Waleed Abdulqahar and Dr. Sari Ali Hussein						
Email: <u>ag.fadwa.w</u>	aleed@uoanbar.edu.iq						
80.Course Objectives							
<b>Course Objectives</b>	The Fundamentals of Food Manufacturing course aims to						
	enrich students' knowledge of the following:						
	1- The science of food processing and its objectives						
	2- How to establish food factories, the factors that must						
	be provided for this purpose, and the obstacles that stand						
	in the way of achieving the development of food						
	industries in Iraq.						
	3- Causes of food spoilage and various manifestations of						
	spoilage.						
	4- The various means of preserving food and the various						
	manufacturing processes that are performed on food and						
	how to implement them in food factories in a scientific						
	and sequential manner for the purpose of preserving food						
	and manufacturing various products, such as canning,						
	cooling, freezing, drying, pickling, and preserving with						
	high salt and sugar concentrations and food additives.						
	5- Manufacturing specific food products such as jams,						
	juices, vinegar, pickles, tomato products, molasses,						
	burgers, and samoon.						
6- Different packaging materials, their advantages,							
	disadvantages, and uses.						
81. Teaching and Lea	rning Strategies						
Strategy 1. Deve	eloping teaching programs in coordination with higher						
depa	rtments.						
2. Deve	eloping teaching curricula similar to the work environment.						

82 (	Jourso	<ol> <li>Sending students to departments and directorates for the purpose of conducting summer school.</li> <li>Assigning students to conduct research and reports related to the course.</li> <li>Assigning students to use of libraries and websites to collect sources on course topics.</li> </ol>				
02. (		Required		Learning	Evaluation	
Week	Hours	Learning Outcomes	Unit or subject name	method	method	
	5	Fundamentals of Food Manufacturing	Introduction to food manufacturing, its importance, requirements, and obstacles to its development in Iraq	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.	
2	5	Fundamentals of Food Manufacturing	Food preservation and its various methods – Refrigerating and freezing preservation	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting	

					extracurricular
					activities.
3	5	Fundamentals	Preservation using high	Daily,	Delivering
		of Food	temperature and	monthly, and	theoretical
		Manufacturing	canning	quarterly	lectures and
				exams +	conducting
				grades	class
				awarded for	discussions to
				extracurricular	stimulate
				activities,	thinking and
				discussions,	conclusion
				and class	using
				participation.	brainstorming
					and positive
					reinforcement,
					and
					conducting
					extracurricular
					activities.
4	5	Fundamentals	Packaging materials	Daily,	Delivering
		of Food		monthly, and	theoretical
		Manufacturing		quarterly	lectures and
				exams +	conducting
				grades	class
				awarded for	discussions to
				extracurricular	stimulate
				activities,	thinking and
				discussions,	conclusion
				and class	using
				participation.	brainstorming
					and positive
					reinforcement,
					and
					conducting
					extracurricular
					activities.
5	5	Fundamentals	Preservation by drying	Daily,	Delivering
		of Food		monthly, and	theoretical
		Manufacturing		quarterly	lectures and
				exams +	conducting
				grades	class
				awarded for	discussions to
				extracurricular	stimulate
				activities,	thinking and

				discussions	conclusion
				and class	using
				and class	using brainstorming
				participation.	
					and positive
					reinforcement,
					and
					conducting
					extracurricular
					activities.
6	5	Fundamentals	Food preservation by	Daily,	Delivering
		of Food	pickling and pickles	monthly, and	theoretical
		Manufacturing	manufacturing	quarterly	lectures and
				exams +	conducting
				grades	class
				awarded for	discussions to
				extracurricular	stimulate
				activities,	thinking and
				discussions,	conclusion
				and class	using
				participation.	brainstorming
					and positive
					reinforcement.
					and
					conducting
					extracurricular
					activities
7	5	Fundamentals	Preservation with sugar	Daily	Delivering
/	5	of Food	and salt solutions	monthly and	theoretical
		Manufacturing	und suit solutions	auarterly	lectures and
		manaractaring		exams $\pm$	conducting
				grades	class
				graces	discussions to
				awalueu 101	stimulato
					thinking and
				diamasiona	annalusion
				uiscussions,	conclusion
				and class	using hasiasto
				participation.	orainstorming
					and positive
					reinforcement,
					and
					conducting
					extracurricular
			et		activities.
8	5	Fundamentals	The 1 <sup>st</sup> monthly exam	Daily,	Delivering

9	5	of Food Manufacturing	Iam and Jolly	monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.
9	5	Fundamentals of Food Manufacturing	Jam and Jelly manufacturing	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.
10	5	Fundamentals of Food Manufacturing	Tomato paste and tomato products manufacturing	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming

					and positive reinforcement, and conducting extracurricular activities
11	5	Fundamentals of Food Manufacturing	Date and Date syrup manufacturing	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.
12	5	Fundamentals of Food Manufacturing	Samoon bread manufacturing	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.
13	5	Fundamentals of Food Manufacturing	Burger manufacturing	Daily, monthly, and quarterly exams +	Delivering theoretical lectures and conducting

				grades awarded for extracurricular activities, discussions, and class participation.	class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting
14	5	Fundamentals of Food Manufacturing	Food additives	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	extracurricular activities. Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and conducting extracurricular
15	5	Fundamentals of Food Manufacturing	The 2 <sup>nd</sup> monthly exam	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities, discussions, and class participation.	activities. Delivering theoretical lectures and conducting class discussions to stimulate thinking and conclusion using brainstorming and positive reinforcement, and

	conducting extracurricular activities.
83.Course Evaluation	
1- Conducting tests during the seme	ster and asking questions to students to
determine their understanding of the su	bject.
2- Conduct a research discussion at the	e end of the semester to find out students'
choices in courses.	
3- Conduct extracurricular activity by	writing reports or educational brochures
after completing the semester period to	determine the extent to which students are
able to diagnose problems and how to f	ind solutions.
84.Learning and Teaching Resources	
Required textbooks (curricular book	s, Hassan, Abdul Ali Mahdi and Al-
any)	Hakim, Sadiq Hassan. 1985.
	Fundamentals of Food Manufacturing.
	Ministry of Higher Education and
	Scientific Research - University of
	Baghdad.
Main references (sources)	Al-Shaibani, Ali Muhammad Hussein.
	1989. Food Processing - Section One.
	Ministry of Higher Education and
	Scientific Research. University of Al
	Mosul.
Recommended books and reference	s Al-Samahi, Salah Kamel et al., 2011.
(scientific journals, reports)	Food Technology. Amman, Dar Al
	Masirah for Publishing, Distribution and
	Printing.
Electronic References, Websites	Many references from the Internet

			-				
1. Cou	irse Nar	ne:					
Englis	h langu	age 3					
2. (	Course	Code:					
AFC19	19						
3. 9	Semeste	er / Year: Sea	isonal / 1 <sup>st</sup> attempt				
2023_2	2024						
4. ]	Descrip	tion Prepara	tion Date:				
25_1_2	2024						
5. 4	Availabl	e Attendance	Forms:				
V	Weekly						
6. 1	Number	of Credit Ho	urs (30) Number	of Units (1.5)			
	<u>30 hour</u>	s 2 units per	week				
1.0	Jourse	administrate	or's name (mention all	, if more than o	ne name)		
	Smail: a		OU All				
8. (	Course (	Obiectives	e uoanoar.cuu.ng				
Course	Objective	s Stu	dents learn English lan	guage skills thro	ugh several nai		
		inclu Alsc lang whit	uding reading, writing, b, part of the curriculum guage, which is based ch is agriculture.	pronunciation, and includes the stundes the stundes the stundes on English for a	nd listening ski ident's specializ a special purpo		
9	Teaching	g and Learnir	ng Strategies				
Strategy	Strategy       1.       lecture.         2.       Explanation and clarification.         3.       Use electronic technology for clarification (PowerPoint, videos, etc.).						
10. 00							
Week	Hours	Required	Unit or subject name	Learning	Evaluation		
		Learning		method	method		
		Outcomes					
1	2	Oral	Talking about you	Oral & power point	weekly & monthly Exam		
2	2	Oral	Part of speech	Oral & power point	Weekly & monthly Exam		
3	2	Oral	Question Marks	Oral & power point	Weekly &		

						monthly Exam
	2	Oral		Telling tales		Weekly &
4	Z	orur	Past s	imple continuous	Oral & nower point	monthly Exam
Т	(F		(E	SP)Plant parts	orar a power point	
	2	Oral	Doin	g the right things		Weekly &
5	2		Pre	sent continuous	Oral & power point	monthly Exam
0			(E	SP)Plant parts	r i r i r i r	
	2	Oral	(12	I just love it		Weekly &
6	2		]	Future forms	Oral & power point	monthly Exam
Ũ			(E	SP)Plant parts		
7	2	Oral		Check Point	Oral & nower point	Weekly &
/	-		<b>T</b> . <b>1</b>	1 2 1 1	orar & power point	monthly Exam
0	2	Oral	lt's a	wonderful word		Weekly & monthly Exam
8				Present tense	Oral & power point	montany Enam
			(E	SP)Plant parts		
0	2	Oral	(	bet happy		Weekly & monthly Exam
9			Si	mple tense	Oral & power point	montany Enam
			(E	SP)Plant parts		
10	2	Oral	Mak	ing conversation	Oral & power point	Weekly & monthly Exam
10			(ESP)Plant parts			
11	2	Oral	Reading and speaking		Oral & power point	Weekly & monthly Exam
			(ESP)Plant parts		1 1	
12	2	Oral	Check Point		Oral & power point	Weekly & monthly Exam
	2	Oral		Practicing		Weekly &
13	2			Theorems	Oral & power point	monthly Exam
	2	Oral	Practicing			Weekly &
14	4			6	Oral & power point	monthly Exam
1 5	2	Oral		Practicing		Weekly &
15	-			C	Oral & power point	monthly Exam
11. 0	Course I	Evaluation				
daily o	ral mont	hly and writte	on evans	reports etc		
	<u>.</u> .		<u>– – – – – – – – – – – – – – – – – – – </u>			
12. L	earning	and leachin	ig Resou	rces		
Required	d textboo	ks (curricular bo	ooks,	headway interm	nediate (Student bo	ok) 5th edition
if any)		X	-			
ii airy)				-1 -1		
Main ref	erences	(sources)		Plant morpho	ology book	
Recomm	hended	hooks and re	ferences			
			Free Online English Lessons			
(scientific journals, reports)						
				Improve Your English Speaking		
Electron	ic Refero	ncas Wahsitas		https://onlin	ne.fliphtml5.com/obpq	y/auii/index.html
					· · · · · · ·	

1. Cou	rse N	Jar	ne:				
Englis	English language4						
2. (	Cours	se (	Code:				
AFC192	20						
3. 9	Seme	ste	er / Year: S	easonal / 1 <sup>st</sup> attempt			
2023_	2024	ŀ					
4. I	Descr	ipt	tion Prepa	ration Date:			
25 /1/ 2	2024	1	1				
5. 4	Avail	abl	e Attendan	ce Forms:			
1	Neek	ly					
6. I	Numb	ber	of Credit H	Iours (45) Number o	f Units (1.5)		
7 (	$\frac{30 \text{ ho}}{20 \text{ mm}}$	our	s 2 units p	er week	if more then a		
1.0	Jour	se v T	auministra	alors name (mention all,	ii more than o	ne name)	
I	Email	5. I.  • ac	inau Mann	d@uoanbar.edu.ig			
8. (	Cours	<u>е</u> (	Objectives	<u>u e uounour.cuu.r</u>			
Course	Object	ive	s (	tudents learn English lang	uage skills thro	ugh several nai	
			in in	cluding reading writing n	ronunciation a	nd listening ski	
			A	lso, part of the curriculum i	includes the stu	ident's specializ	
			la	nguage, which is based o	n English for a	a special purpo	
			w	hich is agriculture.	0		
9	Feach	ninę	g and Lear	ning Strategies			
Strategy		1.	lectur	2.			
		2.	Explar	nation and clarification.			
		3.	Use el	ectronic technology for cla	arification (Pov	verPoint,	
		vi	deos, etc.).				
10. Course Structure							
Week	Hou	rs	Required	Unit or subject name	Learning	Evaluation	
			Learning		method	method	
			Outcomes				
1		2	Oral	Who am I	Oral & PowerPoint	Weekly & monthly Exam	
1							
2		2	Oral	Questions and negative	Oral & PowerPoint	Weekly & monthly Eyom	
<u>ک</u>		~		(ESP)Photosynthesis	Ovel 9 Desugar		
3		2	Oral	I will Gaduate Future Forms	Ural & PowerPoint	Weekly & monthly Exam	
						<u> </u>	
			(ECD	Photosynthesis			
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	2	Oral	(LSF I have finish	or notosynthesis	Oral & PowerPoint	Weekly &	
1	Z	Ofai	I have miss	nt parfact form	orar de l'owerr onne	monthly Exam	
4			(ESP)Photosynthesis				
	2	Oral	(LSF	So am I	Oral & PowerPoint	Weekly &	
	Z	Ulai	Mada	SO alli I	orar & rowerromt	monthly Exam	
5				Dhata arrith a sig		, j	
		Orral	(ESP	()Photosynthesis		Wookly 8	
(	2	Urai	when	e are you going		monthly Exam	
6			Mode	Dhata armthasia	Oral & power point	, j	
	0	Oral	(ESP	Photosynthesis		Wookly &	
7	Z	Ulai		Lneck Point	Oral & PowerPoint	monthly Exam	
	2	Oral	It's a	wonderful word		Weekly &	
8	-		Comparativ	e and superlative	Oral & PowerPoint	monthly Exam	
_			(ESP	)Photosynthesis			
	2	Oral	Wher	are you from		Weekly &	
9	-		Speakir	ng and listening	Oral & PowerPoint	monthly Exam	
			(ESP	)Photosynthesis			
	2	Oral	Maki	ng conversation		Weekly &	
10	-		Vocabulary	and grammar	Oral & PowerPoint	monthly Exam	
			(ESP	)Photosynthesis			
11	2	Oral	Reading and speaking			Weekly &	
11	-		(ESP)Photosynthesis		Oral & PowerPoint	monthly Exam	
12	2	Oral	Check Point		Oral & PowerPoint	Weekly &	
12	-	Qual				monthly Exam	
13	2	Oral	Practicing		Oral & power point	monthly Exam	
		Oral				Wookly &	
14	2	Urai	Practicing		Oral & PowerPoint	monthly Exam	
		Orral				Wookly &	
15	2	Urai	Practicing		Oral & PowerPoint	monthly Exam	
11. (	Course I	Evaluation					
dailv o	ral. mon	thly. and wri	tten exams.	reports etc.			
12. Lea	arning and	Teaching Res	sources	1			
Deguined	tauthaalu			headway Unner-	intermediate (Studen	t book) 5th	
Required	IEXIDOOK:	s (curricular bo	JUKS,	edition		( 000K) 5th	
if any)				••••••			
Main refe	erences (s	ources)		Plant Physiology			
(000.000)							
Recommended books and references			Free Online English Lessons				
(scientific journals, reports)			Free Online Engl	IISTI LESSOTIS			
· · · · · · · · · · · · · · · · · · ·			Improve Your English Speaking				
					gion opening		
Electronic	c Referen	ces. Websites		https://onl	ine.fliphtml5.com/ob	pqy/auii/index.htm	
					· · · · · ·		

1. Cou	ırse Na	ime				
Engli	sh lan	guage 1				
2. (	Course	Code:				
AFC192	17					
3. 9	Semest	er / Yea	r: Sea	isonal /1 <sup>st</sup> attempt		
2023_2	2024					
4. ]	Descrij	otion Pre	para	tion Date:		
25 /1 /	2024					
5. 4	Availat	ole Attend	lance	Forms:		
6	Weekly	/ r of Crod	it Ua	ure (20) Number (	of Unite (1.5)	
0.1	30 hou	rs 2 unit	n no s ner	week	01  OIIIts(1.5)	
7. 0	Course	admini	strate	pr's name (mention all	, if more than o	ne name)
]	Name:	Ahmed A	A. Aln	narie	)	/
]	Email:	ag.ahmed.a	bdalw	ahed@uoanbar.edu.iq		
8. 0	Course	Objective	es			
Course Objectives			Stu inclu Alsc lang whi	dents learn English lang uding reading, writing, o, part of the curriculum guage, which is based ch is agriculture.	guage skills thro pronunciation, a includes the stu on English for a	ugh several par ind listening ski ident's specializ a special purpo
9	9. Teaching and Learning Strategies					
Strategy     1.     lecture.       2.     Explanation and clarification.       3.     Use electronic technology for clarification (PowerPoint, videos, etc.).			werPoint,			
10. Co					Fuchaetien	
Week	Hours	Require	bd	Unit or subject name	Learning	Evaluation
		Learnin	g		method	method
	2		ral	Where I live	Oral & power point	Weekly &
1	Ζ		1 01	There is , are , any		monthly Exam
2	2	0	ral	Happy birthday Saying years	Oral & power point	Weekly & monthly Exam
3	2	0	ral	Question Marks	Oral & power point	Weekly & monthly Exam

	2	Oral	We h	ad GOOD TIME Weekl		
4				simple Past	Oral & power point	monuny exam
			(ESP)Plant parts			
5	2	Oral	perse	onal information	Oral & nower point	Weekly &
5			(E	SP)Plant parts	orar a power point	monuny exam
	2	Oral		It's my life		Weekly &
6			Positive a	adjective forms	Oral & power point	monuny Exam
			(E	SP)Plant parts		
7	2	Oral		Check Point	Oral & power point	Weekly &
	2	Oral		Evervdav		Weekly &
8	2			The Time	Oral & power point	monthly Exam
U			(F	SP)Plant parts	oran a pontor ponte	
	2	Oral	(	Greetings		Weekly &
9	2		(E	SP)Plant parts	Oral & power point	monthly Exam
1.0	2	Oral		If. I		Weekly &
10	2		(E	SP)Plant parts	Oral & power point	monthly Exam
4.4	2	Oral	Vocabula	ry and Reading		Weekly &
11	2		(ESP)Plant parts		Oral & power point	monthly Exam
12	2	Oral	Check Point		Oral & nower point	Weekly &
12	-				orar & power point	monthly Exam
13	2	Oral	Practicing		Oral & power point	weekly & monthly Exam
	0	0				Weelshy 9
14	2	Oral	Practicing		Oral & power point	monthly Exam
	2	Oral	Duratiaina			Weekly &
15	Z	Ulai	Fracticing		Oral & power point	monthly Exam
	 `					
11. (	Jourse E	zvaluation				
daily of	ral, mont	hly, and writte	en exams,	reports etc.		
12. L	earning	and Teachir	ng Resou	rces		
Deside				headway Begin	ner (Student book)	5th edition
Required		ks (curricular b	ooks,	neadway Degin	lier (Student book)	
if any)						
Main references (sources)				Plant morpho	logy hook	
Main references (sources)			i lune moi prie	logy book		
Recommended books and references			Free Online English Lessons			
(scientific journals, reports, )						
			Improve Your English Speaking			
Electron	ic Refere	nces. Websites	;	https://onli	ne.fliphtml5.com/obpqy	/auii/index.html
		,				

1. Cou	L. Course Name:					
Englisl	h lang	gua	age2			
2. (	Cours	se (	Code:			
AFC191	<u>16</u>	ata	vn / Voore C	accord /1st attempt		
3. 3 2023 (	$\frac{\text{seme}}{2024}$	ste	er / Year: S	easonal /1 <sup>st</sup> attempt		
	2024		- D			
4. I	$\frac{\text{Descr}}{2024}$	ip	tion Prepa	ration Date:		
5. 1	Avail	abl	e Attendan	ce Forms:		
l l	Week	ly				
6. 1	Numb	ber	of Credit H	Iours (45) Number of	of Units (1.5)	
7 (	30 ho	our	s 2 units p	er week	if more then a	
1.0	Vame	se ⊶⊿	hmed A A	lmarie	II More man o	ne name)
	Email	l: a	g.ahmed.abda	lwahed@uoanbar.edu.iq		
8. (	Cours	se (	Objectives			
Course	Course Objectives Students learn English language skills through several pa				ugh several pai	
			in	cluding reading, writing, p	pronunciation, a	nd listening ski
			A	lso, part of the curriculum	includes the stu	ident's specializ
			ia w	nguage, which is based of high is agriculture	on English for a	a special purpo
			v	filen is agriculture.		
9	9. Teaching and Learning Strategies					
Strategy	,	1.	lecture	2.		
		2.	Explar	nation and clarification.		
		3. vi	Use el doos otal	ectronic technology for cla	arification (Pov	verPoint,
10. Course Structure						
Week	Hou	rs	Required	Unit or subject name	Learning	Evaluation
			Learning		method	method
			Outcomes			
1		2	Oral	Model verbs	Oral & PowerPoint	Weekly & monthly Exam
1						
2		2	Oral	Verb patterns	Oral & PowerPoint	Weekly & monthly Exam
		2	Oral	Vegetable & Fruits	Oral & PowerPoint	Weekly &
3		-		Future Forms		monthly Exam

		Orral	(ESP)	Photosynthesis	Oral & DorwonDaint	Maaluly 9
4	2	Urai		he weather	Of all & PowerPollit	monthly Exam
4			Prese	Dh at a synth a sig		
		Qual	(ESP)	Photosynthesis	Oral & DorwonDaint	Maalulu 9
-	2	Oral		want to talk	Oral & PowerPoint	monthly Exam
5			Mode	auxiliary verbs		
			(ESP	)Photosynthesis		
	2	Oral	Have to, sh	ould, and Must		Weekly & monthly Fyam
6			Mode	l auxiliary verbs	Oral & powerpoint	montiny Liam
			(ESP)	)Photosynthesis		
7	2	Oral	0	Check Point	Oral & PowerPoint	Weekly &
	2	Oral	D	ast Porfact		Weekly &
o	Z	orai	I Comparativ	a and superlative	Oral & DoworDoint	monthly Exam
0			(ESD	Dependence (	orar & rowerrollit	
	2	Oral		Filotosynthesis		Weekly &
0	Z	Orai	I Succharia	eenings	Oral & DesugerDesignt	monthly Exam
9			Speaкin	Dhe te see the size	Oral & PowerPoint	-
		Orral	(ESP)	Photosynthesis		Wookly 9
10	2	Urai	Kigni word wrong word		Oral & PowerPoint	monthly Exam
			(ESP	)Photosynthesis		147 1-1 Q
11	2	Oral	Readin	ng and speaking	Oral & PowerPoint	weekiy & monthly Exam
			(ESP)Photosynthesis			
12	2	Oral	Check Point		Oral & PowerPoint	Weekly & monthly Exam
	2	Oral		Practicing		Weekly &
13	2		1 raotioning		Oral & power point	monthly Exam
	2	Oral	Practicing			Weekly &
14	2		Tracticity		Oral & PowerPoint	monthly Exam
	2	Oral	Practicing			Weekly &
15	2		1 rectioning		Oral & PowerPoint	monthly Exam
11 (						
11. Course Evaluation						
daily o	ral, mont	thly, and wri	tten exams, 1	reports etc.		
12	earning	and Teach	ning Resour	res		
12. 6	-curring					
Required	d textboo	ks (curricular	books,	headway Pre- in	termediate (Studen	t book) 5th
if any)			edition			
Main references (sources)			Plant Physiolo	gy		
			Eroo Online Er			
Recommended books and references			Free Online English Lessons			
(scientific journals, reports)				English Speakin	a	
				-nglish Opeakill	<b>A</b>	
Electron	ic Refere	nces, Websit	es	https://onlin	e.fliphtml5.com/obpqy	/auii/index.html
		-				

1. Course maine.
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#### Fundamentals of Agricultural Extension

2. Course Code:

#### AFC1918

3. Semester / Year:

Second semester 2023\_2024

4. Description Preparation Date:

25/1/2024

5. Available Attendance Forms:

regularity (attendance)

- 6. Number of Credit Hours (Total) / Number of Units (Total)
  - 75 Hour / 3.5unit
- 7. Course administrator's name (mention all, if more than one name) Waleed Abdulsattar Taha El-Fahdawi
  - ag.waleed.abdal@uoanbar.edu.iq
- 8. Course Objectives

Course Obiec	tives		
		Providing the student with basic knowledge	
		of agricultural extension concepts	
		Providing the student with the general	
		concepts and principles of agricultural	
		extension,	
		Providing the student with the objectives of	
		agricultural extension,	
		Providing the student and introducing him	
		to how to plan agricultural extension	
		programs	
9. Teac	ning and Learning Strategies		
Strategy	A theoretical clarification of the vocabulary of the subject, using da		
	to understand the scientific	subject	

	Using graphs in scientific material, student participation in lecture						
10 Cc	10 Course Structure						
			Unit or subject	Learning	Evaluation		
WEEK	nours	Outcomes	name	method	method		
1	5	Knowledge and understanding Skillfor the subject	brief history	theoretically Practical vocabulary Subject	Examination, reporting		
2	5	Knowledge and understanding Skill for the subject	Introduction to agricultural extension	theoretically Practical vocabulary Subject	Examination, reporting		
3	5	Knowledge and understanding Skill for the subject	The importance of agricultural	theoretically Practical vocabulary Subject	Examination, reporting		
4	5	Knowledge and understanding Skill for the subject	Principles of agricultural extension	theoretically Practical vocabulary Subject	Examination, reporting		
5	5	Knowledge and understanding Skill for the subject	The importance of having principles of guidance work	theoretically Practical vocabulary Subject	Examination, reporting		
6	5	Knowledge and understanding Skill for the subject	Mention the principles and the importance of each of them	theoretically Practical vocabulary Subject	Examination, reporting		
7	5	Knowledge and understanding Skill for the subject	Objectives of extension work	theoretically Practical vocabulary Subject	Examination, reporting		
8	5	Knowledge and understanding	Introducing the	theoretically Practical	Examination, reporting		

Image: state in the state in			Skill for the subject		vocabularv	
Image: state in the state in			,	process of	Subject	
Image: state in the state in				communicating with		
5Knowledge and understanding Skill for the subjectFactors affecting communicationtheoretically Practical vocabulary SubjectExamination, reporting05Knowledge and understanding Skill for the subjectRural leadershiptheoretically Practical vocabulary SubjectExamination, reporting15Knowledge and understanding Skill for the subjectAdoption and spread of modern technologies in agriculturetheoretically Practical vocabulary SubjectExamination, reporting25Knowledge and understanding Skill for the subjectPlanning extension programstheoretically Practical vocabulary SubjectExamination, reporting35Knowledge and understanding Skill for the subjectAgricultural extension methods and extension toolstheoretically Practical vocabulary SubjectExamination, reporting45Knowledge and understanding Skill for the subjectAgricultural extension methods and extension toolstheoretically Practical vocabulary SubjectExamination, reporting55Knowledge and understanding Skill for the subjectAgricultural extension programsExamination, reporting55Knowledge and understanding Skill for the subjectAgricultural extension in Iraq and its stages of developmentExamination, reporting11.Course EvaluationCourse EvaluationPractical extensionExamination, reporting				audiences		
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12. Learning and Teaching Resources	3
Required textbooks (curricular books, if any)	
Main references (sources)	Fundamentals of Agricultural Extension
Recommended books and references	
(scientific journals, reports)	
Electronic References, Websites	

## **Course Description Form** 1. Course Name: Land reclamation 2. Course Code: **AFC1935** 3. Semester / Year: Second semester - 2023\_2024 4. Description Preparation Date: 2024-1-25 5. Available Attendance Forms Weekly 6. Number of Credit Hours (65) Number of Units (3) 75 Hour / 3.5unit Course administrator's name (Dr.Ahmed Rivadh Abdulateef) 8. Course Objectives the students know what are the problems of the lands that need **Course Objectives** be reclaimed, namely saline, soda, gypsum, calcareous, san acidic, waterlogging and clay lands to be reclaimed 9. Teaching and Learning Strategies Strategy A. The student must know what is the meaning of land reclamation, understand the causes and theories of each land problem that causes low production, and implement a reclamation program for each problem in order to return this land to its natural productivity with the highest efficiency. **B.** Subject-specific skills To link the student between the problems of the land and how to reclaim it and what are the ways to implement the reclamation program with the highest efficiency, and to propose multiple solutions to solve the problems of these lands and expand the use of the available lands to provide food and self-sufficiency in agricultural production and to compare all implemented solutions with the results obtained and apply the best and most qualified. 10. Course Structure

Veek	Hours	Required	Unit or subject	Learning	Evaluation
		Learning	name	method	method
		Outcomes			
1	5	The concept of land reclamation and its r in agricultural produc	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
2	5	Program and stages reclamation of salini affected lands, exploratory survey	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
3	5	Program and stages of reclamation of lands affected by salinity	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
4	5	Determining an appropriate plot of land drawing a topographic 1 and bringing soil model draw a salinity map	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
5	5	Reclamation of land affected by salinity ar calculating the rate o washing	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
6	5	First month exam theory & practica	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
7	5	The mechanics of the movement of salts duri washing and the use of water in reclamation	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
8	5	Acid Land Reclamation	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
9	5	Waterlogging So Reclamation	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
10	5	Reclaimed Land Management	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
11	5	Sodic Land Reclamati	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
12	5	Gypsum Land Reclama	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
13	5	Reclamation of limesto lands	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
14	5	Reclamation of desert a sandy lands	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
15	5	2 <sup>nd</sup> month exam theory & practic	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
11. (	Course I	Evaluation			

Daily exam 5, reporting5, quarterly exam 40, Final Exam 50 (total score 100)			
12. Learning and Teaching Resources			
Required textbooks (curricular books, if an	Land reclamation theoretical and applied foundations / Prof. Ahmed Haider Al- Zubaidi University of Baghdad Applied Land Reclamation / Hadi Yasser Abboud		
Main references (sources)	References related to land reclamation		
Recommended books and references (scientific journals, reports)	Books or references related to land reclamation		
Electronic References, Websites			

1. Course Name:         Human rights and democracy         2. Course Code:         DEHR105         3. Semester / Year:         SEMESTER 2023_2024         4. Description Preparation Date:         25/1//2024         5. Available Attendance Forms:         Presence         6. Number of Credit Hours (Total) / Number of Units (Total)         30 hours 2 units per week         7. Course administrator's name (mention all, if more than one name)         Name: abd al salam khalaf         Email: abd.khalaf@uoanbar.edu.iq         8. Course Objectives         1- Preparing students who believe in human rights and democracy         2-Instilling national values in the individual and society and combating forms of corrupti         4- Knowledge of the general rights and freedoms of the individual and society 1- Practical application of public rights and freedoms of the individual and society 1- Practical application of public rights and freedoms         9. Teaching and Learning Strategies         Strateg         1- Enabling students to obtain the intellectual framework         A believer in the strategy of human rights and public freedoms         2- Preparing a generation that is conscious and aware of the importance of rights and freedoms         3- Instilling the principles of patriotism and preserving it         4- Developing a culture of human rights and dem							
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Week	Hours	Required Learning	Unit or	<sup>.</sup> subject	Learning	Evaluation	
		Outcomes	name		method	method	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Understanding an learning skills developmen Correct spelling Know the errors Knowledge and awareness Learn to parse Learn to parse Learn to parse Knowledge and perception Learn Arabic Proper pronunciation Learn the differences Brief and learn Discrimination Understanding an perception The right style	Definit rights A histor human Human religior The mo rights a Human society Suppor provisit conven For hur Applica rights o Admini and wa Concep nationa Democ stages) Difficul implem in socie Disting rights a Charact democr Advant disadva democ	ition of human rical overview of rights rights in heaver as ost important pul and freedoms rights violations ting internationa ons and tions nan rights tions in the gene of the individual strative corrupti ys to combat it ts of instilling al values in socie racy (definition - t) racy (historical ties in tenting democra ety uishing between and democracy teristics of a ratic system ages and antages of racy racy applications ction ratic Constitution	My presence My presence	the exam the exam	
11. Course Evaluation							
1- Through daily and monthly exams, homework, oral exams, attendance, and class activities.							
12. Learning and Teaching Resources							
Required	d textbool	ks (curricular books, if a	any)	Human right	s, children an	d democracy	
Main ref	Main references (sources)						
Recomm	nended	books and refer					
(scientifi	c journals	s, reports)					
Electron	IC Refere	nces, Websites					