

**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

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

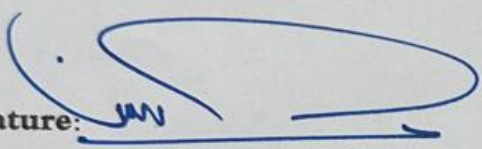
Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

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

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

Academic Program Description Form

University Name: University of 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: 

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
Dean 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 Structure

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

Course Description	Course 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

2.11 Second Year

Course Description	Course 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

3.11 Third Year

Course Description	Course 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 Breeding	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	Course Name	Course Code	Class Hours	Units
1st Semester \Core	Medicinal Plants	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	Molecular Genetics	AFC1946	2	3.5
1st Semester \Core	Landfarming	AFC1945	2	3.5
1st Semester \Core	Project Graduation	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	Environmental Stress	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.**

11.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	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 Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

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

Program Skills Outline

Please put (√) in the boxes corresponding to the individual learning outcomes of the evaluated program

Year \ Course			Required learning outcomes of the program															
Course name	Course code	Core or elective	Knowledge and understanding				Subject-specific skills				Thinking skill				General and transferable skills (Or) Other skills related to employability and personal development			
			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
1st Year			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
Field Crops	AFC1911	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Organic chemistry	AFC1912	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Plant Science	AFC1913	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Plane surveying	AFC1914	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Mathematics	AFC1915	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Engineering Drawing	AFC1916	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Human Rights	AFC1917	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Biochemistry	AFC1918	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
English Language	AFC1919	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Principles of Field Crops	AFC19120	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Principles of Soil	AFC19121	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Principles of Animal Production	AFC19122	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Computer Skills	AFC19123	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
2nd Year			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D2	D3	D4
Principles of Horticulture	AFC 1921	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

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

Freedom and democracy	AFC19224	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Arabic Language	AFC19225	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
English Language	AFC1919	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3 rd Year			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D2	D3	D4
Plant Genetics	AFC1931	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Design & Experiment analysis	AFC1932	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Mechanizations & Field crops Machinery	AFC1933	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Field crops Insect	AFC1934	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Salinity and reclamation	AFC1935	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Forage Crops	AFC1936	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Fiber Crops	AFC1937	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Cereal Crops	AFC1938	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Legume Crops	AFC1939	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Field Crops diseases	AFC19310	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Bee Breeding	AFC19311	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Computer Skills	AFC19312	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Seed Technology	AFC19313	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4 th Year			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D2	D3	D4
Medicinal Plants	AFC1941	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Plant physiology	AFC1942	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Weed Biology	AFC1943	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Field Crops Management	AFC1944	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Molecular Genetics	AFC1946	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Landfarming	AFC1945	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Project Graduation	AFC1947	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Plant Breeding	AFC1948	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Growth Regulators	AFC1949	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Weed Control	AFC19410	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Seminars	AFC19411	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Pasture Management	AFC19412	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Environmental Stress	AFC19413	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Project Graduation	AFC19414	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

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

Course Description Form

1. Course Name:					
Environmental stress					
2. Course Code:					
AFC19412					
3. Semester / Year:					
Semesters (Second 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)					
75 hours (Theoretical 30 hours and practical 45 hours)/ 3Units					
7. Course administrator's name (mention all, if more than one name)					
Name: Waleed Abdulsattar Taha El-Fahdawi Email:ag.waleed.abdal@uoanbar.edu.iq					
8. Course Objectives					
A- Expand the student's theoretical and practical perceptions.					
B- Learn about modern technologies related to environmental stress.					
C-Identify the biotic and abiotic factors related to environmental stress.					
D-Identify the types of stress and the representative and metabolic processes of the plant under stress conditions.					
9. Teaching and Learning Strategies					
1- The method of giving lectures regarding the theoretical framework of the subject.					
2- Method of explanation, interpretation and linking.					
3- Explanation method using electronic demonstration aids (Data show).					
4-Using the regular blackboard and pen to explain and explain some of the things that need to be clarified to the student					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	(2theoretical +3 practical)5	Environment Stress	Introduction to environmental stress	Lecturing (theoretical and practical)	Daily and monthly test + scores on activities, reports and attendance
2			Stress of abiotic factors (climate and non-climate) (temperature, humidity and rain).		
3			Stress of abiotic factors (light, invisible radiation and Photoperiodism).		
4			Water stress		
5			Water stress		

6			Water stress and physiological processes in the plant		
7			Salt stress		The first month exam
8			Crops tolerate to salinity		
9			Data on crop tolerance to salinity and methods used to increase tolerance.		
10			Representative and metabolic processes of the plant under stress conditions.		
11			Oxidative stress		
12			Stress of metallic elements		
13			High heat stress		
14			Low heat stress		
15			Pollution stress		The second month exam

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<p>1-The water tension in plants. Dr. Bassam Taha Yassin. Faculty of Science - University of Mosul. 1992.</p> <p>2-Scientific foundations for managing, producing and improving field crops. Ministry of Higher Education and Scientific Research - Iraq. Pp. 1067. Dr. Iyad Hussein Ali Al-Maeni and Dr. Muhammad Awaid Ghadeer Al-Obaidi. 2018.</p> <p>3- Inheritance and breeding of crops due to environmental stress (drought, high temperature, environmental pollution). part One. The Egyptian Library. For printing, publishing and distribution. Alexandria. The Egyptian Arabic Republic. Hassan Odeh Awad. 2009.</p>
Main references (sources)	<p>1-Plant breeding under conditions of various 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.</p> <p>2-Fundamentals of plant physiology. Dr. Bassam Taha Yassin, 2001.</p>
Recommended books and references (scientific journals, reports...)	<p>1-Arabic and English scientific magazines</p> <p>2-Ashraf, M., M. Ozturk, H.R. Athar. 2009. Salinity and Water Stress: Improving Crop Efficiency. Pp. 244</p>
Electronic References, Websites	Lectures from the Internet.

Course Description Form

1. Course Name:	
Field crops management.	
2. Course Code:	
AFC1944	
3. Semester / Year:	
Spring 2023–2024.	
4. Description Preparation Date:	
25–1–2024	
5. Available Attendance Forms:	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours (Theoretical 30 hours and practical 45 hours)/ 3Units	
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.iq	
8. Course Objectives	
Course Objectives	<p>1-Determining the human role in providing food and population increase and the consequences of increasing the food gap, and productivity factors.</p> <p>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.</p> <p>3 -Knowledge of the management of the field crops before and after planting and the various agricultural processes accompanying them.</p> <p>4-Shed light on the types of irrigation canals and irrigation methods and reduce irrigation losses.</p> <p>5-Calculation of plant density and seed quantities according to the crop, the role of plant density in intercepting light and increasing.</p> <p>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.</p> <p>7-Paying attention to adding soil conditioners - using hemp and green manure and adding gypsum and agricultural sulfur to repair saline and saline-alkaline soil</p>
9. Teaching and Learning Strategies	

Strategy	<p>1-Providing students with the basics and additional topics related to previous learning outcomes of skills, to solve scientific problems.</p> <p>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.</p> <p>3- Conducting a set of plant and soil tests such as plowing, smoothing, leveling, fertilization methods, irrigation methods, and by the academic staff.</p> <p>4- Students' participation in the actual examinations.</p>
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10. Course Structure

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

6	5	Plant density and seed quantities according to the crop, the role of plant density in intercepting light and increasing yield, optimal densities main crops, optimal planting distances for crops planted in lines, and 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 data to know the effect of nitrogen Dose.	=
7	5	Fertilization - the role of main, secondary and rare fertilizers in growth, yield increase and symptoms of element deficiency on the plant, the relationship of the 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 management	Cultivation of a crop with several doses of (NPK) to compare it with nitrogen fertilization only.	=
8	5	Seeds - seed quality, seed quantities plant densities and their calculations.	field crops management	Cultivate a crop and irrigate it with 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 animal and green manure and the addition of gypsum and agricultural sulfur to repair saline and alkaline saline soils and its relationship to the electrical conductivity and pH of the soil solution and the readiness of the elements for the plant, and the equations for estimating the 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. The number of irrigations for the crop and the determination of the depth of irrigation and how to calculate it. Water rations for major crops.	field crops management	Each group of students writes down the percentage of insects and diseases and attempts to diagnose them for each planted crop.	=

		Calculating the amount of water needed for the field on the farm.			
12	5	Methods and depth of cultivation scattered cultivation in merows and terraces and cultivation in lines and importance to the type of crop. The relationship of the nature of root growth in each method and its reflection on the growth of the crop.	field crops management	Study of sections of root, stem, flowers, ovaries, pollen grains and embryo sac.	=
13	5	Crop adaptation - temperature, light, quality, intensity and duration, 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 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 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 organs and their functions - plant cell and its organelles, root stem, leaves, leaf area. Maturity at harvest - how to harvest and the appropriate time for the crop, and estimate the losses from the crop. Storage of the yield - types of stores and storage, storages of seeds and grains and their specifications and storage conditions in them such as temperature, humidity and pesticides, methods of drying the yield in the field and in the store, a titration of moisture in the seeds before and at storage.	field crops management	Each student presents his report to the students, discusses it and gives it a grade.	=

11. Course Evaluation

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

12. Learning and Teaching Resources

Required Textbooks (curricular books, if any)	<p>1-The scientific basis for the management, production and improvement of field crops. Dr. Iyad Hussein Al-Muaini and Prof. Muhammad Awaid Ghadeer Al-Obaidi. College of Agriculture - University of Anbar, 2018.</p> <p>2- Introduction to plant physiology. Dr.. Mrs. Omar Al-Huwairis and Dr. Tayeb Haj Ali Ahmed. Khartoum . Khartoum University Publishing House, 2010.</p> <p>3- A strategy for managing and irrigating field crops. NS. Dr.. Nemat Abdel Aziz Nouredine and I. Dr.. Mohamed Fawzy Hamed and d. Hani Saber Saudi. Academic Library. Cairo . Arab Republic of Egypt, 2013.</p> <p>4- Plant nutrition guide. Dr.. Youssef Muhammad Abu Dahi and d. Supporter Ahmed Younis. College of Agriculture - University of Baghdad, 1988.</p> <p>5- Reclamation and improvement of desert lands. Dr.. Maher Georgy Naseem.</p>
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	<p>Faculty of Agriculture - Saba Pasha - Alexandria University (first edition). 2006 .</p> <p>6- Production and improvement of field crops (part one). Abdul Hamid Ahmed Al-Younes, University of Baghdad - College of Agriculture, 1993.</p> <p>7- Grain production. Mr. Dr. Abdel Hamid Mohamed Hassanein, Faculty of Agriculture - Azhar University, Arab Republic of Egypt 2019.</p> <p>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.</p> <p>10- Lectures on crop management. so. Medhat Majeed Al-Sahoki, College of Agriculture - University of Baghdad, 2012.</p>
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	11 - Lectures and statistics from the cluster network.

Course Description Form

1. Course Name:	
Pastures management	
2. Course Code:	
AFC19411	
3. Semester / Year: second	
2023_2024	
4. Description Preparation Date:	
25-1-2024	
5. Available Attendance Forms: in person	
Weekly	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 Theoretical Hours + 45 Practical Hours 3 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. yas amen mohammed Email: ag.yass.ameen@uoanbar.edu.iq	
8. Course Objectives	
A - Studying the scientific aspects related to the exploitation and development of natural pastures in general and in Iraq in particular and how to develop it. B- Expanding the student's theoretical and practical understandings.	
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> -Increasing students' awareness of modern trends in managing and protecting pastures. -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. - Semester and final exams are considered a reflection of the student's commitment and cognitive and skill achievement.
10. Course Structure	

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

Course Description Form

1. Course Name					
weed control methods					
2. Course Code:					
AFC19410					
3. Semester / Year: Seasonal / 2nd attempt					
2023-2024					
4. Description Preparation Date:					
25-1-2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (45) Number of Units (3)					
5 units (2 theoretical +3 practical).					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahmed A. Almarie Email: ag.ahmed.abdalwahed@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives		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		1. lecture. 2. Explanation and clarification. 3. Use of electronic means of clarification (Data show). 4. practical lessons in agricultural fields			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Oral	Introduction in weeds	Oral & power point	Weekly & 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 Exam
7	5	Oral	Weed Control Methods	Oral & power point	Weekly & monthly Exam
8	5	Oral	Chemical Weed Control	Oral & power point	Weekly & monthly Exam
9	5	Oral	Weed Competition	Oral & power point	Weekly & monthly Exam
10	5	Oral	Herbicides Translocation	Oral & power point	Weekly & monthly Exam
11	5	Oral	Modern methods in Weed control	Oral & power point	Weekly & monthly Exam
12	5	Oral	Herbicides Residues	Oral & power point	Weekly & monthly Exam
13	5	Oral	Classification of Herbicides Groups	Oral & power point	Weekly & monthly Exam
14	5	Oral	Improving Herbicides Efficacy	Oral & power point	Weekly & monthly Exam
15	5	Oral	The Latest Researches in Weed Control	Oral & power point	Weekly & monthly Exam

11. Course Evaluation

daily oral, monthly, and written exams, reports etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Korres, N. E., Burgos, N. R., & Duke, S. O. (Eds.). (2018). Weed control: sustainability, hazards, and risks in cropping systems worldwide. CRC Press. 2- Gressel, Jonathan. Molecular biology of weed control. Vol. 1. CRC Press, 2002.
Main references (sources)	Weed Control Methods. Ghanem Saadallah Hassawi and d. Baqer Abdul Khalaf Al-Jubo Ministry of Higher Education and Higher Education - University of Baghdad. 1982.
Recommended books and references (scientific journals, reports...)	- 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. - Weeds and Principles of control Methods. Dr. Salem Hammadi Antar Al-Obaidi. Ministry of Higher Education, Education Sciences a. 2009
Electronic References, Websites	www.weed science.com

Course Description Form

1- Course Name:	
Fiber Crops	
2- Course Code:	
AFC1937	
3- Semester / Year:	
2023_2024	
4- Description Preparation Date: spring	
25-1-2024	
5- Available Attendance Forms: Direct	
Weekly	
6- Number of Credit Hours (Total) / Number of Units (Total): 75 / 5	
75 hours (Theoretical 30 hours and practical 45 hours)/ 3Units	
7- Course administrator's name (mention all, if more than one name)	
Name: Assist Prof. Abdullsamad Hashim Noaman Email: ag.abdullsamad.hashim@uoanbar.edu.iq	
8- Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • The student will be acquainted with the scientific bases in Fiber Crops, both theoretical and practical. • Expand the student's theoretical and practical knowledge. • Getting acquainted with the modern techniques related to Fiber Crops. • Identifying biotic and abiotic factors related to Fiber Crops.
9- Teaching and Learning Strategies	
Strategy	<p>1- Providing students with theoretical and practical scientific knowledge on the subject of Fiber Crops of all kinds.</p> <p>2- Students benefit from practical experiences in the subject of Fiber Crops and its relationship to various growth factors and the conditions surrounding the plant.</p>

10- Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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 Cotton		
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...)	Egyptian cotton production and processing technology
Electronic References, Websites	

Course Description Form

13. Course Name					
Plant ecology					
14. Course Code:					
AFC19221					
15. Spring semester/semester					
2023_2024					
16. The date this description was prepared is					
25-1-2024					
17. Available Attendance Forms:					
morning and evening, 95% morning and 75% evening					
18. Number of Credit Hours (Total) / Number of Units (Total) Five hours of theory + practical					
75 hours (Theoretical 30 hours and practical 45 hours)/ 3Units					
19. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Omar Ismail Mohsen Email:					
20. Course Objectives					
Course objectives: We explain to students the importance understanding environmental factors, including climatic and oceanic conditions, and their relationship to			Course objectives: We explain to students importance of understanding environmental factors including climatic and other oceanic conditions, their relationship to		
21. Teaching and Learning Strategies					
Strategy					
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical practical		Lecture 1: Concepts of ecology		Daily exam participation in lesson + written scientific reports monthly exams
2	2 theoretical practical		Lecture 2 Climatic factors		

3	2 theoretical practical		The first month's exam is theoretical		
4	2 theoretical practical		Lecture 3 Light as an environmental factor		
5	2 theoretical practical		Lecture 4 Heat and climate change		
6	2 theoretical practical		Lecture 5 Water and its different forms		
7	2 theoretical practical		Lecture 6: Dividing plants according to their need water		
8	2 theoretical practical		A quick review of the lectures included in the second month exam and the second month theoretical exam		
9	2 theoretical practical		Lecture 7 Air as an environmental factor		
10	2 theoretical practical		Lecture 8 Topographic factors and their impact on the environment		
11	2 theoretical practical		Lecture 9: Soil as an important environmental factor in the life of plants		
12	2 theoretical practical		Lecture 10: The concept of biotic factors and their impact on the environment		
13	2 theoretical practical		Lecture 11: The effect of animals on plants and the environment		
14	2 theoretical practical		Lecture 12, the concept of environmental pollution with the third month exam		
15	2 theoretical practical		Lecture 1: Concepts of ecology		

23. Course Evaluation

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

24. Learning and Teaching Resources

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

Course Description Form

1. Course Name					
Plant Breeding					
2. Course Code:					
AFC1948					
3. Semester / Year: Course Spring					
2023_2024					
4. Description Preparation Date					
25-1-2024					
5. Available Attendance Forms					
Direct					
6. Number of Credit Hours (Total) / Number of Units (Total) 75 / 5					
morning and evening, 95% morning and 75% evening					
7. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Zeyad Abdul-Jabar Abdul-Hamed					
Email: ag.zeyad.abdul-hamed@uoanbar.edu.iq					
Course Objectives :					
8.					
The student learns about the scientific foundations for designing and analyzing theoretical and practical plant breeding			Learn about modern technologies relevant to For genetic engineering relevant in plant breeding		
9. Teaching and Learning Strategies					
Strategy		A - Expanding the student's theoretical and practical plant breeding B - Access to recent and critical experiments related to plant breeding C -Learn about methods for plant breeding, processes, and conditions surrounding the research plant breeding			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation 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 asexual reproduction,	theoretical and practical	theoretical and practical	Theoretical and practical tests

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

11. Course Evaluation

- 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 journals, reports...)	Book of Principles of selection and plant genetic improvement
Electronic References, Websites	http// Principles of plant breeding. com.

Course Description Form

1. Course Name:					
Experiment Design					
2. Course Code:					
AFC1932					
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) 75 / 5					
morning and evening, 95% morning and 75% evening					
7. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Zeyad Abdul-Jabar Abdul-Hamed Email: ag.zeyad.abdul-hamed@uoanbar.edu.iq					
Course Objectives :					
8.					
The student learns about the scientific foundations designing and analyzing theoretical and practical experiments			Learn about modern technologies relevant to designing experiments		
9. Teaching and Learning Strategies					
Strategy		A - Expanding the student's theoretical and practical understandings B- Access to recent and critical experiments related to experimental design C-Learn about methods for designing experiments, processes, and conditions surrounding the research or experiment			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	(30 hours theoretical + 45 practical) (75 hours 5 hours (2 + 3)	Look and work Explanation and interpretation with Use means Electronic clarification	Introduction to the history of statistics, first researchers in designing experiments, studying statistical tests	theoretical practical	Theoretical and practical tests
2	5	Look and work Explanation and interpretation with	An introduction to the history of statistics, the first	theoretical and practical	Theoretical and practical 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 experime 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 (RCBD)	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

11. Course Evaluation

- 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 experiments
- 9-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 journals, reports...)	Book of applications in the design and analysis of experiments
Electronic References, Websites	http// Principles of experimental design. com.

Course Description Form

1- Course Name:	
plant classification	
2- Course Code:	
AFC1926	
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): 75 / 5	
7- Course administrator's name (mention all, if more than one name)	
Name: Assist Prof. Abdullsamad Hashim Noaman Email: ag.abdullsamad.hashim@uoanbar.edu.iq	
8- Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • The student will be acquainted with the scientific bases in plant classification, both theoretical and practical. • Expand the student's theoretical and practical knowledge. • Getting acquainted with the modern techniques related to plant classification. • Identifying biotic and abiotic factors related to plant classification.
9- Teaching and Learning Strategies	
Strategy	<p>3- Providing students with theoretical and practical scientific knowledge on the subject of plant classification of kinds.</p> <p>4- Students benefit from practical experiences in the subject of plant classification and its relationship to various growth factors and the conditions surrounding the plant.</p>

10- Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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 exam
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 classification	Inflorescences , Cymose , Racemose		
14	5	plant classification	Fruits and Seeds , Simple fruits , Aggregate fruits		
15	5	plant classification	Pollen Grains Pollination , Pollination , self pollination and cross pollination		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)	Classification of Spermatophytes
Main references (sources)	Morphology and anatomy
Recommended books and references (scientific journals, reports...)	Plant Physiology
Electronic References, Websites	

Course Description Form

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					
8. Course Objectives					
Course Objectives	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 Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5		Seeds - meaning - importance - diagnosis and seed examination in the world and Iraq	Theoretical + practical	Reports material + observations + daily exams
2	5		Seed chemical compositions - importance - cultivation and quality	Theoretical + practical	Reports material + observations

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

					material + observations + daily exams
11	5		Pests and diseases of seeds in storage and moisture content - healthy moisture levels	Theoretical + practical	Reports material + observations + daily exams
12	5		Midterm 2	Theoretical + practical	Reports material + observations + daily exams
13	5		Preparing seeds for processing	Theoretical + practical	Reports material + observations + daily exams
14	5		Legislation and laws for trading certified and approved seeds	Theoretical + practical	Reports material + observations + daily exams
15	5		General review + discussions + solving questions	Theoretical + practical	Reports material + observations + daily exams

Course Evaluation

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

11. Learning and Teaching Resource

Required textbooks (curricular books, if any)	SEED TECHNOLOGY- R.L. Agarwal
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Oil and sugar crops					
2. Course Code:					
AFC1929					
3. Semester / Year:					
Second Semester (Spring) 2023-2024					
4. Description Preparation Date:					
25-1-2024					
5. Available Attendance Forms:					
Attendance (study and exams)					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75 hours (30 theoretical + 45 practical) / Number of Units : 3					
7. Course administrator's name (mention all, if more than one name)					
Name: Asst.Prof.Dr.Ismail Ahmed Sarhan + Asst. teacher Amer Hashem Email: ag.ismail.ahmed@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives					
1- Providing students with knowledge of the nature and function of agricultural methods from an academic and professional point of view			4 – Dissemination of knowledge in the fields of agricultural sciences and human nutrition and work on its application to serve the community. 5- Providing the agricultural sector with specialized cadres with expertise, knowledge and skill in the field of agriculture and production to provide food security		
2- Understand the nature of agriculture work based on international and local statistical standards					
3- Providing students with information related to programs and files related to farming methods					
9. Teaching and Learning Strategies					
Strategy		1- Adopting the method of giving lectures and linking each topic with examples from the reality of agricultural work. 2- Giving the students some simple practical exercises that are discussed by them and solved during the lecture, with the participation of all students in the section with the professor, to give the subject a kind of interaction. 3 - Demonstrating the students' ability to give some possibilities and other ways to solve some problems. 4- Preparing reports on specific topics.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
the first	5	Providing students with information about oil crops and their importance in providing food security	Oil crops: their definition, their economic importance, the most important crops they represent, oils and their types.	Attendance	Discussion, daily exams, monthly exams

the second	5	Statement of the importance of 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 of 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 importance of soybean as an oil crop	Soybean: its importance, methods of cultivation, suitable soil for it, its harvest and pests that affect it	Ettendance	Discussion, daily exams, monthly exams
Sixth	5	Statement of the importance of safflower as an oil crop	Safflower: economic importance, origin, types, varieties, botanical description, suitable environment and soil and crop service processes	Ettendance	Discussion, daily exams, monthly exams
Seventh	First month exam				
Eighth	5	Statement of the importance of 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 of castor as an oil crop	Castor: its importance, methods of cultivation, suitable soil for it, the service of the crop and its medicinal uses	Ettendance	Discussion, daily exams, monthly exams
The Tenth	5	Statement of the importance of 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 of sugar cane as a major crop for the production of sugar	Soil and crop service operations (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 sugar.	Ettendance	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 soil and service operations for the sugar beet crop	Soil and crop service factors (planting date, planting methods, seed classifications, crop service operations (mowing, weeding, fertilizing, irrigation, harvesting, yield, agricultural cycles)	Ettendance	Discussion, daily exams, monthly exams

Fifteenth

Second month exam

11. Course Evaluation

- 1- Through the students' participation in the lecture, based on their prior preparation for the subject.
- 2- Giving them an exercise as homework and asking the students to bring the solution on a separate sheet in the subsequent lecture.
- 3- Giving the students a specific case study and dividing the students into groups to write a report about that study
- 4 - Evaluation through daily and monthly examinations

12. Learning and Teaching Resources

Required textbooks (curriculum books, if any)	1 - Mahmoud Al-Shaer and others. 2015. Oil, sugar and fiber crops 2- Al-Baldawi and others. 2014. Principles of field crop production. 3- Safar, Nasser Hussein. 1990. Oil and sugar crops. 4 - Rizk and Ali. 1981. Oil and sugar crops
Main references (sources)	Using the results obtained from scientific research, master's theses and doctoral dissertations
Recommended books and references (scientific journals, reports...)	Scientific articles and periodic reports on the reality of agriculture from FAO and others
Electronic References, Websites	Lectures and studies from the Internet

Course Description Form

1-Course Name:					
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 style="list-style-type: none"> • Introducing the importance of forage crops • Studying the ways to improve fodder production, storage and utilization • Studying the necessary ways to improve forage production, storage and utilization 			
9- Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 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 to forage crops	A historical overview of the beginning and development of forage crops and their importance in human and animal life, taxonomy of forage crops and places of origin	Lectures	Exams
2	5	Legume forage crops	Leguminous forage crops and their importance	Lectures	Exams
3	5	Legume forage crops	Alfalfa, its types, importance, appropriate environment, methods of cultivation, field practice.	Lectures	Exams

4	5	Legume forage crops	Clover, its types, importance, favorable environment, methods of cultivation, field practice.	Lectures	Exams
5	5	Forage crops	Annual Medic, its types, importance, appropriate environment, methods of cultivation, field practice.	Lectures	Exams
6	5	Forage crops	Sweet clover, its types, importance, appropriate environment, methods of cultivation, field practice	Lectures	Exams
7	5	Grass summer forage crops	Sorghum, and Sudan grass its types, importance, appropriate environment, methods of cultivation, field practice.	Lectures	Exams
8	5	Grass summer forage crops	Corn and millet its types, importance, appropriate environment, methods of cultivation, field practice.	Lectures	Exams
9	5	Grass winter forage crops	barley, oats and rye grass, types and varieties, field practice	Lectures	Exams
10	5	Forage crops	Intercropping and agricultural cycles	Lectures	Exams
11	5	Forage crops	Harvesting and storage	Lectures	Exams
12	5	Manufacture of hay and silage	Manufacture of hay and silage by traditional and modern methods, aerobic and anaerobic reactions, compounds resulting from fermentation.	Lectures	Exams
13	5	Toxic substances and compounds in forage crops	Toxic substances and compounds in forage crops and ways to prevent them	Lectures	Exams
14	5	Estimation of forage quality trail	Dry matter, digestibility and protein,	Lectures	Exams
15	5	Estimation of forage quality trail	Estimation of carbohydrates, fiber and ash	Lectures	Exams

11- Course Evaluation

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

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 (scientific journals, reports...)	Forage Seed Production. Temperate Spec Edited By D.T.Fairey and J.G.Hampton C international.1997.U.K PP420
Electronic References, Websites	https://en.wikipedia.org/wiki/Forage

Course Description Form

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. <ul style="list-style-type: none"> • 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. 					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation 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,

		practical	definition - importance - divisions - (monosaccharides, polysaccharides, polysaccharides)	laboratory	laboratory exam, assignments, and homework
7/3/2024	5	Theoretical and practical	Monosaccharides - Analogues 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

11. Course Evaluation

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 journals, reports...)	Practical Biochemistry Written by: Dr. Ali Hassan Al-Dawadi
Electronic References, Websites	S.P.Singh.2007. A Textbook of Biochemistry , Fourth Edition , CBS Publishers Distributors& New-Delhi. Banglore.

Course Description Form

1. Course Name:					
Principles of field crops					
2. Course Code					
AFC19120					
3. Semester / Year: Autumn					
2023_2024					
4. Description Preparation Date:					
25-1-2024					
5. Available Attendance Forms:					
presence only					
6. Number of Credit Hours (Total) / Number of Units (Total):					
45 hours per semester/3 hours per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahmed Shehab Abdullah Ramadan					
Email: ag.ahmed.shehab@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives			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. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> -Education strategy, collaborative concept planning. -Education strategy brainstorming. -Education strategy notes series 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	3	Introduction to crop science and recent statistics on food production in the world		Theoretical	Weekly, monthly and daily exams and exam End of year.
2	3	Morphological characteristics of field crop families			
3	3	Methods of classifying field crops			
4	3	Factors affecting crop production (heat, light, and CO ₂)			
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			
9	3	Seed and grain grading science			
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			

11. Course Evaluation

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

Course Description Form

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 : <ul style="list-style-type: none">• 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 name</u>	education method	Evaluation 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 month exam					
7	5(2 +3)	legume crops	Alkaloids: their composition, composition, effects and chemical extraction methods Chickpea - 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 chickpeas methods	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.

6- The course vocabulary (practical) and includes the following: The characteristics of the legume family in general and the botanical description of the bean crops, chickpeas, lentils, mung, soybeans, peas, beans and hartman.

Course Description Form

1- Course Name:					
Plant Growth Regulators					
2- Course Code:					
AFC1949					
3- Semester / Year: years , season spring					
2023_2024					
4- Description Preparation Date:					
25-1-2024					
5- Available Attendance Forms:					
Presence					
6- Number of Credit Hours (Total) / Number of Units					
(Total)75 (5 hours weekly)					
7- Course administrator's name (mention all, if more than one name)					
Name: assistant prof. Bushra Shaker Jassim Email: ag.bushra.shaker@uoanbar.edu.iq					
8- Course Objectives					
Course Objectives					
<ul style="list-style-type: none"> • Teaching students the basics of science related to growth • Teaching students about the types of plant growth regulators • Teach students how to treat plants with plant growth regulators 			<ul style="list-style-type: none"> • Teaching students the physiological effects of plant growth regulators • Teaching students the applications of using plant growth regulators in the field of food crops • Teach students the role of plant growth regulators in increasing crop production 		
9- Teaching and Learning Strategies					
Strategy		A. Knowledge and Understanding A1- Enable students to acquire knowledge of the basics of science related to development. A2- Enable students to know the methods of controlling growth through treatment with plant growth regulators A3 - Know the means and types of plant growth regulators. A4- Enabling students to obtain knowledge and understanding of the plant's hormonal needs. A5 - Enable students to obtain knowledge and understanding of ways to improve hormonal growth.			
10- Course Structure					
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation

		Outcomes	name	method	method
1	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Terms related to plant growth regulators and their applications	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
2	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Plant growth regulators Auxins	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
3	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Gibberellins	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
4	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Gibberellins	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
5	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Get to know gibberellins	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
6	5	First Exam		Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
7	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	abscisic acid	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
8	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Other compounds that act as plant growth regulators	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
9	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Examples of applications for preparation and use of different concentrations of plant growth regulators	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
10	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Physiological effects of plant growth regulators: rooting, apical dominance, dormancy of seeds and shoots.	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
11	5	Knowledge terminology related plant growth regulators and their applications Using electronic media	Vegetative growth, flowering, setting of fruits and development of fruits	Lecture, discussion, reports, laboratories science movie	Quick and monitored exams, class activities and reports
12	5	Knowledge terminology related plant growth regulators and their applications	For maturity, age, precipitation and the phenomenon of flooding (exchange of pregnan	Lecture, discussion, reports, laboratories	Quick and monitored exams, class activities and reports

		Using electronic mea	تبادل	science movie	
13	5		Second Exim	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
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, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
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, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports

11- Course Evaluation

Quick daily exams.

- Monthly exams (two or more).
- Evaluation of the students' classroom activity
- Assessments on writing research, scientific reports and homework
- Direct oral exams
- Classroom and home activities

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	plant growth regulators. Dr. Makki Alwan Al-Khafaji .2014 Regulators of growth and flowering. Dr. Emad El Din Wasfi. 1995 Plant Hormones T. K. Davies 1995
Main references (sources)	Actahort.com Ashs.org Springler
Recommended books and references (scientific journals, reports...)	Journal of Biotechnology Center - Al-Nahrain University Diyala Journal of Agricultural Sciences - University of Diyala Iraqi Journal of Agricultural Sciences University of Baghdad
Electronic References, Websites	https://arab-ency.com.sy/ency/details/10085/19

Course Description Form

1- Course Name:	
General Plant	
2- Course Code:	
AFC1913	
3- Semester / Year: years , season spring	
2023_2024	
4- Description Preparation Date:	
25-1-2024	
5- Available Attendance Forms:	
Presence	
6- Number of Credit Hours (Total) / Number of Units	
(Total)75 (5 hours weekly)	
7- Course administrator's name (mention all, if more than one name)	
Name: assistant prof. Bushra Shaker Jassim Email: ag.bushra.shaker@uoanbar.edu.iq	
8- Course Objectives	
<p>Course Objectives</p> <ul style="list-style-type: none"> • Teaching students the basics of science related to plant • Teaching students about the types of plant • Teach students how to treat plants with plant growth regulators 	<ul style="list-style-type: none"> • Teaching students the relationship between plant physiology and plant • Teaching students the applications of plant morphology in the field of field crops • Teach students the type of plant
9- Teaching and Learning Strategies	
Strategy	<p>A. Knowledge and Understanding</p> <p>A1- Enable students to acquire knowledge of the basics of science related to development.</p> <p>A2- Enable students to know the methods of controlling growth through treatment with plant growth regulators</p> <p>A3 - Know the means and types of plant growth regulators.</p> <p>A4- Enabling students to obtain knowledge and understanding of the plant's hormonal needs.</p> <p>A5 - Enable students to obtain knowledge and understanding of ways to improve hormonal growth.</p>
10- Course Structure	

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

		and their applications Using electronic mea		laboratories science movie	
13	5		Second Exim	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports
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 and mon exams, class acti and reports
15	5	Knowledge terminology related plant growth regula and their applications Using electronic mea	photosynthesis= Cellular respiration	Lecture, discussion, reports, laboratories science movie	Quick and mon exams, class acti and reports

11- Course Evaluation

Quick daily exams.

- Monthly exams (two or more).
- Evaluation of the students' classroom activity
- Assessments on writing research, scientific reports and homework
- Direct oral exams
- Classroom and home activities

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	General Botany
Main references (sources)	Botany
Recommended books and references (scientific journals, reports...)	Journal of botany
Electronic References, Websites	https://www.barnesandnoble.com/b/books/biology-life-sciences/botany/_/N-29Z8q8Z18ca

Course Description Form

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

- 1- Increase students' knowledge about the nature genetic materials and its structure and how to expressed inside cells
- 2- Increase students' knowledge about the techniq based on PCR

9- Teaching and Learning Strategies

Strategy

- 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- Course Structure

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
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		Learning Outcomes	name		
1	2	Molecular genetics Introduction	Introduction about molecular genetics and the development of this science	Lectures	Exam
2	2	Molecular genetic Applications	Explaining application molecular genetic	Lectures	Exam
3	2	Experiments: Proof of Genetic material (DNA) -1	Explaining experiments that proved DNA is genetic materials	theoretical and practical lectures	Exam
4	2	Experiments: Proof of Genetic material (DNA) -2	Explaining experiments that proved DNA is genetic materials	theoretical and practical lectures	Exam
5	2	DNA and Structure -1	The structure nucleic acids and unique structure	theoretical and practical lectures	Exam
6	2	DNA and structure - 2	The structure nucleic acids and unique structure	theoretical and practical lectures	Exam
7	2	Gene Expression	To exploit the genetic information and how gene is expressed inside cells	theoretical and practical lectures	Exam
8	2	Gene Expression Regulation	Focus on regulation of the gene expression which controlled by cells	theoretical and practical lectures	Exam
9	2	Genetic Code	Explain the reading the genetic codes	theoretical and practical lectures	Exam
10	2	Protein Synthesis	The product of gene expression proteins	theoretical and practical lectures	Exam
11	2	DNA replication	DNA replication during cell division	theoretical and practical lectures	Exam
12	2	Genetic Mutation	Explain the change in gene or nitrogen base which leads to changes in gene expression	theoretical and practical lectures	Exam
13	2	Genetic Mutation	Explain the change in gene or nitrogen base which leads to changes in gene expression	theoretical and practical lectures	Exam

14	2	Extranuclear DNA	Focus on the genetic material outside nucleus such as mitochondria and chloroplasts	theoretical and practical lectures	Exam
15	2	Epigenetics	Epigenetic explain some traits which cannot be explained by genetics	theoretical and practical lectures	Exam

11- Course Evaluation

Term Tests: 15
 Lab: 10
 Quizzes: 15
 Project: 10
 Final: 50

12- Learning and Teaching Resources

Required textbooks (curricular books, any)	Course books Other
Main references (sources)	Zahra M Alkhafaji and Hassan M Abu-Almaali. 2013. PCRing and Primer Design. University of Baghdad, Baghdad. P, 304.
Recommended books and references (scientific journals, reports...)	Mahmood M. Refaat and Saad B. Aloutabi. 2008. Introduction to Biotechnology. The General Egyptian Association of International Books and Documents,
Electronic References, Websites	https://www.bankofbiology.com/2018/08/molecular-basis-of-inheritance.html#google_vignette

Course Description Form

1- Course Name:	
Principle of Statistics	
2- Course Code:	
AFC19220	
3- Semester / Year:	
Spring season 2023–2024	
4- Description Preparation Date:	
25-1-2024	
5- Available Attendance Forms:	
<ul style="list-style-type: none"> - 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	<p>Introducing students to the importance and functions statistics.</p> <p>Training students to apply statistics in their field specialization.</p> <p>Enable the student to follow the scientific method collecting, classifying, summarizing, and displaying data a clear way, and finding statistical measures for the data.</p> <p>Enable the student to formulate hypotheses, test them and make comparisons</p> <p>Enable the student to make plans and follow the correct steps in order to reach appropriate conclusions and decisions</p>
9- Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> • Providing students with theoretical and practical scientific knowledge on the subject of statistics • The ability to collect and classify data • The ability to measure the degree of relationship between variables.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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 functions written in statistical symbols	Lectures	Exam
3	2	Data collection and tabular presentation	Data collection, Frequency distributions, Frequency distribution table, Creating a frequency table, Class length, Class center, True limits, Relative	theoretical and practical lectures	Exam
4	2	Graphic representation	Graph of Frequency Distributions with Histogram, Polygon and Frequency Curve	theoretical and practical lectures	Exam
5	2	Measures of Central Tendency	Arithmetic mean, median, and mode	theoretical and practical lectures	Exam
6	2	Measures of Dispersion and Variation	Range, mean deviation, variance, standard deviation, and coefficient of variation	theoretical and practical lectures	Exam
7	2	Correlation coefficient	Simple correlation, the relationship between two independent variables, the correlation significance test	theoretical and practical lectures	Exam
8	2	Regression coefficient	Simple linear regression, finding the relationship between two variables, one	theoretical and practical lectures	Exam

			independent and the other dependent, predicting the value of the dependent variable in terms of		
9	2	Principles of probability theory	Permutations and combinations	theoretical and practical lectures	Exam
10	2	Discrete Probability Distribution	binomial distribution	theoretical and practical lectures	Exam
11	2	Continuous Probability Distribution	Normal distribution standard normal distribution curve	theoretical and practical lectures	Exam
12	2	Continuous Probability Distribution	Areas under the normal distribution curve, applications	theoretical and practical lectures	Exam
13	2	Chi-square	Independence, consent	theoretical and practical lectures	Exam
14	2	Hypothesis testing	Hypothesis formulation and testing, null hypothesis and alternative hypothesis, probability level, T test, Z-test	theoretical and practical lectures	Exam
15	2	Analysis Variance	Variance analysis table	theoretical and practical lectures	Exam

11- Course Evaluation

Term Tests: 15
 Lab: 20
 Quizzes: 10
 Project: 5
 Final: 50

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Course books Other
Main references (sources)	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...)	Medical, Ahmed Abdel Samie. 2007. Principles of Statistics, Amman. The starting house. RA: (6/17/2007) www.daralbedayah.com . David, M. Lane. Introduction to Statistics. Online Edition.
Electronic References, Websites	https://www.scribbr.com/methodology/experimental-design/

Course Description Form

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.iq					
8. Course Objectives					
Course Objectives		1-Study of the most important cereal crops in the world. 2-It includes knowing the spread of each crop in different regions of the world. 3-Knowing the economic importance of grain crops. 4- Identify the methods of growing each crop and the factors affecting the productivity of each crop.			
9. Teaching and Learning Strategies					
Strategy		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 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 subject 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.	=
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

<p>Required Textbooks (curricular books, if any)</p>	<ul style="list-style-type: none"> -Wheat cultivation and production techniques / Jamal Al-Shibiny. The first edition. The Egyptian Library 2009. -The Scientific Book on Cereal Manufacturing / Abbas Hassan Hussein. first edition. University of Baghdad 2009. -Field crop production, Dr. Salah El-Din Abdel-Razzaq Shafshak and d. Abdel Hamid Al-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, University 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 Websites	<ul style="list-style-type: none"> - Lectures and statistics from the cluster network.

Course Description Form

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 :
<ul style="list-style-type: none">• 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 name</u>	education method	Evaluation 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)	Identify 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 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	Transpiration 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	Interpretation of water loss theories	Discussion, daily exams, monthly exams

		plant (ready slice of leaf)			
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 transportation and long term transportation	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.**

- 1- 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.
- 2- Basics of plant physiology. 2001. Written by Dr. Bassam Taha Yassin, Qatar University Arabization Committee

3 - Introduction to Plant Physiology, 2010. Fourth Edition. William G. Hopkins and Norman P. A. Huner. The University of Western Ontario.

4- Bewley, J. D., Bradford, K., & Hilhorst, H. (2012). Seeds: physiology of development, germination and dormancy. Springer Science & Business Media.

Course Description Form

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- Study previous lectures

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

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 month 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' knowledge of secondary metabolites	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 description of some medicinal plants and their economic importance	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 description of some medicinal plants and their economic importance	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	second month exam				

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Herbs is a medicine for every disease, 2015, Dr. Faisal Muhammad Iraqi Medicinal and aromatic plants and their medicinal uses, Dr. A Omran
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

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.iq					
8. Course Objectives					
Course Objectives		1-Study of the most important cereal crops in the world. 2-It includes knowing the spread of each crop in different regions of the world. 3-Knowing the economic importance of grain crops. 4- Identify the methods of growing each crop and the factors affecting the productivity of each crop.			
9. Teaching and Learning Strategies					
Strategy		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 rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Economic importance - production centers	Cereal crops	botanantical 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.	=
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

<p>Required Textbooks (curricular books, if any)</p>	<ul style="list-style-type: none"> -Wheat cultivation and production techniques / Jamal Al-Shibiny. The first edition. The Egyptian Library 2009. -The Scientific Book on Cereal Manufacturing / Abbas Hassan Hussein. first edition. University of Baghdad 2009. -Field crop production, Dr. Salah El-Din Abdel-Razzaq Shafshak and d. Abdel Hamid Al-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, University 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
<p>Main references (sources)</p>	
<p>Recommended books and references (scientific journals, reports...)</p>	
<p>Electronic Websites</p>	<p>- Lectures and statistics from the cluster network.</p>

Course Description Form

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 and knowing the extent of the plant's need for various nutrients and its relationship to plant productivity.			4. Knowing how much, when and how to add these nutrients and in what form (chemical or organic).		
2. The extent of the importance of plant nutrients, forms in which they are found, and the factors affecting their readiness for the plant.			5. Calculating the economic feasibility and cost of added fertilizers, along with raising awareness about reducing the amount of the fertilizers added without affecting yield.		
3. Assessing the fertility state of the soil and identifying symptoms of deficiency of various nutrients that appear on the plant.					
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 Outcomes	Unit or subject name	Learning method	Evaluation method

The first	5	Definition of growth factors affecting it and methods used for fertility evaluation.	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
the second		The foundations of soil and plant relationships, soil fertility, biological readiness and the methods used for fertility evaluation	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
the third		The foundations of soil and plant relationships, soil fertility, biological readiness and the methods used for fertility evaluation	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
the fourth		The necessary elements for plant growth and their classification + foundations that rely on them: implementing field experiment, potting experiment, evaluate soil fertility	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
Fifth		Nitrogen + Estimating the ready quantities of number of macro and micro nutrients	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
VI	First month exam - theoretical and practical				
Seventh		Phosphorus Estimating the ready quantities of a number of macro and micro nutrients	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
VIII		Potassium Estimating the ready quantities of a number of macro and micro nutrients	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
Ninth		Calcium, magnesium and sulfur + estimating the ready quantities of number of macro- and micro-nutrients,	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
The tenth		Micronutrients	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
eleventh		Beneficial nutrients	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam

			fertilizers	explanation and clarification	
twelveth		Organic matter in soil and its importance in fertility + Estimation of the organic matter in the soil	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Soil fertility evaluation methods for estimation of fertility status	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam
Fifteenth		Soil fertility evaluation methods for estimation of fertility status	Soil fertility and fertilizers	A lecture with explanation and clarification	The exam

11. Course Evaluation

- 1- Rapid daily tests.
- 2- Theoretical tests.
- 3- Practical tests.
- 4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Al-Naimi, Saadallah. 1999 Fertilizers and soil fertility. Ministry of Higher Education and Scientific Research, University of Mosul. 2- Awad, Kazem Mashhout 1999 Fertilization and Soil Fertility, Ministry of Higher Education and Scientific Research, University of Basra. 3 - Havlin, J.L., Tisdale, S.L., Nelson, W.L., and Beaton, J.D. 2005, Soil Fertilizers and Fertilizers, 5th edition. USA .
Main references (sources)	1-Awad, Kazem Mashhout 1999 Fertilization and Soil Fertility, Ministry of Higher Education and Scientific Research, University of Basra. 2 - Page, A.L. et. Al. 1982, Methods of soil analysis, part 2 2nd Chemical and microbiological properties. Madison
Recommended books and references (scientific journals, reports...)	1- Al-Ani, Abdullah Najm, 1999 Principles of Soil Science, Ministry of Higher education and scientific research 2- White, R.E, 1979, Introduction to principles and practices of soil science BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of soil analysis, part 2 2nd Chemical and microbiological properties. Madison

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

Course Description Form

1. Course Name:	
Soil Microbiology	
2. Course Code:	
AFC1928	
3. Semester / Year:	
Semester 2023_ 2024	
4. Description Preparation Date:	
25 \ 1 \ 2024	
5. Available Attendance Forms:	
Theoretical lectures, laboratories, field and field visits.	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours \ 15 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Jamal Salih Alkobaisy \ Prof. Dr. Ali Abaas Kadim Email: ag.jamal.saleh@uoanbar.edu.iq \ ali.khadum@uoanbar.edu.iq	
8. Course Objectives	
Course Objectives	<p>1- Soil microbiology examines giving a historical overview, definition, and importance of studying soil microbiology.</p> <p>2- It includes the definition of the groups of soil microorganisms: bacteria, fungi, algae, actinomycetes, protozoa, and root fungi.</p> <p>3- Students get acquainted with the biological transformations of N, the nitrogen cycle, the decomposition of urea, the nitrite process, mineralization and assimilation, C/N ratio.</p> <p>4- The student's knowledge of the biological transformations of phosphorus: its cycle and the role of microorganisms in its transformations.</p> <p>5- Study of the relationships between microorganisms: the area surrounding the roots (the rhizosphere) and the activity of micro-organisms in this area.</p>
9. Teaching and Learning Strategies	
Strategy	<p>1- Brainstorming</p> <p>2- Thinking strategy according to the student's ability (for example) if the student can learn the concept of the existence of microorganisms and distinguish The beneficial from the harmful.</p> <p>3- Critical thinking strategy in learning, which is a term that symbolizes the highest levels of thinking that aims to pose a problem. Then analyze it logically to reach the desired solution.</p>
11. Course Structure	

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment 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 Microbiology	Lecture, explanation and presentation of models	the exam
eleventh	5	The student learns about the relationships between Microbiology.	Soil Microbiology	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 Microbiology	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 Microbiology	Lecture, explanation and presentation of models	the exam

10.Course Evaluation

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

11.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Ghiath Muhammad Qasim and Mudar Abdul Sattar Ali (1989). Soil microbiology. Directorate of Dar Al-Kutub for Printing and Publishing. 2- - Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley.
Main references (sources)	1- Foreign, Iraqi and Arab scientific journals 2- Mmicrobiology of soil, websites.
Recommended books and references (scientific journals, reports...)	- Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley

Electronic References, Websites

Electronic lectures, scientific trips and field visits

Course Description Form

1. Course Name:					
Soil principles					
2. Course Code:					
AFC1918					
3. Semester / Year:					
Semester 2023_2024					
4. Description Preparation Date:					
25/1/2024					
5. Available Attendance Forms:					
Attendance (theoretical + practical)					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours / 3.5 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Huthafia jaseem mohammd Email: ag.huthafia.Jaseem@uoanbar.edu.iq					
8. Course Objectives					
1. Identify the soil, which is the upper part of the earth's crust.			4. Learn about analysis methods for each soil characteristic.		
2. Understanding the mechanism of soil formation and development.			5. Use some laboratory equipment and field tools.		
3. Identify the physical, chemical, fertility and biological characteristics of soil for each type of soil.					
9. Teaching and Learning Strategies					
Strategy		1. Traditional means of explanation and clarification. 2. Electronic means of explanation and clarification. 3. Field work. 4. Adopting student groups for field work to take measurements. 5. Use of surveying devices and equipment. 6. Show illustrative pictures of the devices and their accessories.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Soil development and formation	Soil principles	A lecture with explanation and clarification	The exam
the second	5	Principles of soil	Soil principles	A lecture with	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 - theoretical and practical				
Seventh	5	Estimation of bulk 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 - theoretical and practical				
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
11. Course Evaluation					

- 1- Rapid daily tests.
- 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 journals, reports...)	Soil salinity / Ahmed Haider Al-Zubaidi Soil fertility / Kazem Mashhout Soil Chemistry / Kazem Mashhout Soil survey and classification / Walid Al-Akidi Soil physics/Mahdi Ibrahim Odeh
Electronic References, Websites	Local, regional and international scientific books and journals concerned with soil fertility, especially within scientific virtual libraries.

Course Description Form

1. Course Name:					
Basics of plane space and topography					
2. Course Code:					
AFC1918					
3. Semester / Year					
Semester : 2023_ 2024					
4. Description Preparation Date:					
25/1/2024					
5. Available Attendance Forms:					
Attendance (theoretical + practical)					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours / 3.5 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Huthafia jaseem mohammd Email: ag.huthafia.Jaseem@uoanbar.edu.iq					
8. Course Objectives					
1. Understand the basic principles of mathematics 2. Learn about the scanning that collects information from the hospital 3. Read browser reading from private search data previously drawn browser reading			4. Learn about measuring methods with simple tools and how each tool works 5. Use some surveying devices and learn about their parts and function of each one		
9. Teaching and Learning Strategies					
Strategy		1. Traditional means of explanation and clarification. 2. Electronic means of explanation and clarification. 3. Field work. 4. Adopting student groups for field work to take measurements. 5. Use of surveying devices and equipment. 6. Show illustrative pictures of surveying equipment, its accessories, and survey work accessories. 7. Show illustrative pictures of various field operations.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Definition of surveying, types of surveys, requirements for a good survey, the importance of surveying in agriculture	Basics of plane space and topography	A lecture with explanation and clarification	The exam

the second		Measurement systems, unit measurement, errors mistakes	Basics of plane space topography	A lecture w explanation and clarification	The exam
the third		Tape scanning, sta selection conditions, field b arrangement	Basics of plane space and topography	A lecture w explanation and clarification	The exam
the fourth	5	Errors in survey work, way address them and overco them	Basics of plane space and topography	A lecture w explanation and clarification	The exam
Fifth	5	Drawing scale, its ty categories, and determin factors	Basics of plane space and topography	A lecture w explanation and clarification	The exam
VI	First month exam - theoretical and practical				
Seventh	5	Areas, regular and irreg shapes, area with coordinate	Basics of plane space and topography	A lecture w explanation and clarification	The exam
VIII	5	Leveling, its terminolo types of adjustment, and of the leveling device	Basics of plane space and topography	A lecture w explanation and clarification	The exam
Ninth	5	Types of settlement, phenomena of curvature fracture and their treatment	Basics of plane space and topography	A lecture w explanation and clarification	The exam
The tenth	5	Methods of calculating point levels and elevation differences, direct indirect	Basics of plane space and topography	A lecture w explanation and clarification	The exam
Eleventh	5	Making longitudinal secti defining them, determinin central axis, determining a of points, and drawing scale	Basics of plane space topography	A lecture w explanation and clarification	The exam
Twelveth	5	Calculating point lev measuring distances, projecting the design and ac sections	Basics of plane space and topography	A lecture w explanation and clarification	The exam
Thirteenth	Second month exam - theoretical and practical				
fourteenth	5	Topographic representation methods	Basics of plane space topography	A lecture w explanation and clarification	The exam

Fifteenth	5	Contour lines, methods finding area and contour interval, finding contour line properties	Basics of plane space topography	A lecture with explanation and clarification	The exam
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11. Course Evaluation

- 1- Rapid daily tests.
- 2- Theoretical tests.
- 3- Practical tests.
- 4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Al-Khafaf, Riyad Saleh, 2000, Foundations of Plane Surveying and Topography, College of Agriculture, University of Mosul, Iraq
Main references (sources)	Al-Khafaf, Riyad Saleh, 2000, Foundations of Plane Surveying and Topography, College of Agriculture, University of Mosul, Iraq
Recommended books and references (scientific journals, reports...)	Younis, Samir Muhammad, 2003-2004, Agricultural Survey, Department of Agricultural Engineering, Faculty of Agriculture, Alexandria University, Egypt
Electronic References, Websites	Local, regional and international scientific books and journals concerned with soil fertility, especially within scientific virtual libraries.

Course Description Form

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)				
Name: Dr. Ghazwan Husam Tawfeeq					
Email: ag.ghazwan.hussam@uoanbar.edu.iq					
32.	Course Objectives				
Identifying the design and application engineering fundamentals of agricultural tractors, which enables students of the Department of Field Crops to deal with the use and working methods of machines found in agricultural fields.					
33.	Teaching and Learning Strategies				
<ol style="list-style-type: none"> 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 methods. 3. To learn about the engineering basics of machines, the development of their 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

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 as daily preparation, daily oral, monthly, or written exams, reports etc

6. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ol style="list-style-type: none"> 1. Agricultural tractors and the fundamentals of orchard mechanization. Written by Professor Dr. Abdul Rahman Ayoub Al-Sabbagh. 2. Basics of tractors and agricultural equipment. Written by Mr. Lotfi Hussein Muhammad A
Main references (sources)	كتاب ميكانيكا وهندسة الات زراعية PDF (mechaniclub.com)
Recommended books and references (scientific journals, reports...)	Agricultural mechanization in development. Guidelines for strategy formulation (fao.org)
Electronic References, Websites	Guide-to-good-ploughing.pdf (agrii.co.uk)

Course Description Form

1. Course Name:					
Engineering Drawing					
2. Course Code:					
AFC1944					
3. Semester / Year: semester					
2023_2024					
4. Description Preparation Date:					
25\1\2024					
5. Available Attendance Forms:					
Attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45\2					
7. Course administrator's name (mention all, if more than one name)					
Name: Marwa Yass Khudair					
Email: ag.marwa.yass@uoanbar.edu.iq					
8. Course Objectives					
<p>Basic Understanding: Introducing students to the fundamental concepts of geometric drawing, including symbols, dimensions, and scales. Analysis and Interpretation: Empowering students to analyze and interpret geometric drawings and diagrams efficiently. Technical Skills Development: Enhancing students' skills in using geometric drawing tools such as traditional tools like ruler and compass.</p>					
9. Teaching and Learning Strategies					
Strategy	<p>Interactive Teaching: Using classroom discussions and workshops to enhance interaction among students and exchange of ideas. This helps deepen students' understanding of geometric drawing concepts and applications.</p> <p>Flipped Classroom: Students review theoretical content outside the classroom, while class time is allocated for practical applications.</p> <p>Cooperative Learning: Encouraging students to work in groups to promote collaboration and knowledge exchange, leading to improved communication and teamwork skills.</p> <p>Utilization of Diverse Resources: Providing a wide range of educational resources, including instructional videos, e-books, and scientific articles, to enhance understanding and expand knowledge.</p>				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Absolute Value	Engineering drawing	Attendance	Class assignment
2	2	Learning Draw Scale and Importance	Engineering drawing	Attendance	Class assignment

3	2	Introduction Types of Lines Engineering Drawing	Engineering drawing	Attendance	Class assignment
4	2	Learning Bisecting	Engineering drawing	Attendance	Class assignment
5	2	Geometric Operations	Engineering drawing	Attendance	-
6	2	Parallelism Dividing Lines Equally and Different Proportions	Engineering drawing	Attendance	Class assignment
7	2	Exam	Engineering drawing	Attendance	Class assignment
8	2	Learning Triangular, Quadrilateral, Pentagon Shapes	Engineering drawing	Attendance	Class assignment
9	2	Learning Hexagonal, Heptagonal, Octagonal Shapes	Engineering drawing	Attendance	Class assignment
10	2	Learning Nonagons and Decagons Shapes	Engineering drawing	Attendance	-
11	2	Learning Individual Polygons	Engineering drawing	Attendance	Class assignment
12	2	Learning Parallel Polygons	Engineering drawing	Attendance	Class assignment
13	2	Oval	Engineering drawing	Attendance	Class assignment
14	2	Exam	Engineering drawing	Attendance	-

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Engineering drawing
Main references (sources)	Learning Applications of Engineering Drawing
Recommended books and references (scientific journals, reports...)	Engineering Operations Handbook
Electronic References, Websites	-Geometry Learning Pages

Course Description Form

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					
<ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 1. Traditional means of explanation and clarification. 2. Electronic means of explanation and clarification. 3. Field work. 4. Adopting student groups for field work to take measurements. 5. Show illustrative pictures of the devices and their accessories. 					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
One	5	Drainage under standable, purpose drainage, advantages of drainage drainage in Iraq	Drainage	A lecture with explanation and clarification	The exam
Two	5	Physical soil properties and its relation with drainage	Drainage	A lecture with explanation and clarification	The exam
Three	5	Water flow in soils, pioseuilles la	Drainage	A lecture	The exam

				with explanation and clarification	
Four	First month exam - theoretical and practical				
Five		Evaporation, transpiration, infiltration	Drainage	A lecture with explanation and clarification	The exam
Six	5	Stream flow measurement	Drainage	A lecture with explanation and clarification	The exam
Seven	5	Water timer curves	Drainage	A lecture with explanation and clarification	The exam
Eight	Second month exam - theoretical and practical				
Nine	5	Floods expectations	Drainage	A lecture with explanation and clarification	The exam
Ten	Sub surface water and its resources				
Eleven	5	Soil Water and its vertical distribution	Drainage	A lecture with explanation and clarification	The exam
Twelve	5	Ground water movement	Drainage	A lecture with explanation and clarification	The exam
Thirteen	Third month exam - theoretical and practical				
Fourteen	General Review of the material				
Fifteen	Field Visit to drainage project in college				

11. Course Evaluation

- 1- Daily exams.
- 2- Monthly tests.
- 3- Preparing and delivering seminars.
- 4- Daily posts.
- 5- preparing the special problem.

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Investigation, design, implementation and maintenance / Dr. Mohsin M. Allami and Dr. Alaa S. Aljanabi
Main references (sources)	Investigation, design, implementation and maintenance / Dr. Mohsin M. Allami and Dr. Alaa S. Aljanabi
Recommended books and references (scientific journals, reports...)	Irrigation and Drainage / Laith I. Khalil
Electronic References, Websites	Researches and Studies printed from Internet

Course Description Form

34. Course Name:					
Land cultivation					
35. Course Code:					
AFC1934					
36. Spring semester/ Autumn semester					
2023_2024					
37. The date this description was prepared is 4-8-2024					
25_1_2024					
38. Available Attendance Forms:					
morning and evening, 95% morning and 75% evening					
39. Number of Credit Hours (Total) / Number of Units (Total)					
Five hours of theory + practical					
40. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Omar Ismail Mohsen					
41. Course Objectives					
<ul style="list-style-type: none"> • 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 and types of culture, and future plans to avoid its risks. 					
42. Teaching and Learning Strategies					
Strategy					
43. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical practical		The first lecture: factors of crop production, production and population growth.		Daily exam participation in lesson + write scientific reports monthly exams
2	2		Second lecture: Carbon metabolism in crop plants		

	theoretical practical				
3	2 theoretical practical		The third lecture: Factors for increasing productivity plant density, leaf area, and planting date		
4	2 theoretical practical		Fourth lecture: Nitrogen fixation and increa productivity, land productivity, o succession, ecosystems.		
5	2 theoretical practical		Fifth lecture: The relationship of energy expende crop productivity, energy calculations cultivating hectares, processes to incre the efficiency of energy use.		
6	2 theoretical practical		Sixth lecture: post-harvest losses, measuring los percentage and types of losses, measure reduce losses.		
7	2 theoretical practical		Seventh lecture: Branching in crop plants and relationship to productivity, factors affect branching, factors of emergence in c plants, the root and the root environment		
8	2 theoretical practical		Eighth lecture: Land defects, distribution of pl according to climate, extents of horizo expansion of land cultivation, steps horizontal agricultural expansion in the A world.		
9	2 theoretical practical		Ninth lecture: Cultivation of lands v topographical defects, crops suitable for reclamation period, cultivation of clay, s limestone, and gypsum lands with biolog defects.		
10	2 theoretical practical		Tenth lecture: Evidence of agriculture, developm of vegetation, plants of desert, sal alkaline, arid and sandy lands.		
11	2 theoretical practical		Lecture 11: Irrigation and cultivation needs, o productivity under irrigation, relationship of irrigation water to expected yield, water stress and soil text water requirements of crops.		
12	2 theoretical practical		Lecture 12: Soil biology and the aqu environment, soil horizons and soil ty the relationship of soil depth to its aqu life, fungi and algae in soil.		
13	2 theoretical practical		Lecture 13: General notes on land culture, s tolerant plants, plant tolerance exchangeable sodium, calcium carbon and pH.		
14	2 theoretical practical		Lecture 14: Crop service under conditions cultivation, irrigation, and salinizat 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 theoretical practical		Lecture 15: Factors of crop production, f production and population growth.		

44. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
45. Learning and Teaching Resources					
Required textbooks (methodology, if any) Land cultivation, F			.		
Dr. Medhat Majeed Al-Sahuki					
Main references (sources) - Al-Sahuki, Medhat Majeed. 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					
Ahmed, Riyad Abdel Latif. 1984. Water in plant life. Bc					
Directorate. University of Al Mosul. Iraqi Republic. On p. 512.					
-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					

Course Description Form

46. Course Name:					
Principles of Animal production					
47. Course Code:					
AFC1927					
48. Semester / Year: SPRING					
2023-2024					
49. Description Preparation Date					
25/1/2024					
50. Available Attendance Forms:					
IN CLASS					
51. Number of Credit Hours (Total) / Number of Units (Total):					
5HOURS/3.5 UNITS					
52. Course administrator's name (mention all, if more than one name)					
Name: Assist. Prof. Dr. Mohammed A. AL-Bayar Email: ag.mohammed.ala@uoanbar.edu.iq					
53. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> 1- know importance of animal production economy 2- know cattle and sheep breeds 3- know important methods for animals management 4- know principles on animal feeding 5- know field methods for animal field management 6- know principles of animal physiology 		
54. Teaching and Learning Strategies					
Strategy		Teaching theoretical parts in class by using data show and some new methods, while practical part teach in animal field			
55. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	5	Local and international cattle breeds	Principles of Iraqi and international cattle breeds	Power point and PDF file lecture	Quiz
Second	5	Local and international sheep breeds	Principles of Iraqi and international sheep breeds	Power point and PDF file lecture	Practical examination
Third	5	Reproduction in	Male and female	Power point	Quiz

		animals	reproduction organs	and practical study	
Fourth	5	Animal nutrition	Feed contents, food analysis	Power point and PDF file lecture	Quiz
Fifth	5	Milk production	Milking machines and milk secretion	Power point and practical study	Quiz
Sixth	5	Poultry production	Principle of poultry types and poultry production	Power point and practical study	Quiz
Seventh	5	Milk secretion	Milk secretion physiology	Power point and practical study	Quiz

56. Course Evaluation

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

57. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of farm animals production
Main references (sources)	Principles of farm animals production
Recommended books and references (scientific journals, reports...)	Cattle management Sheep and goat management
Electronic References, Websites	Youtube.com Springer.com

Course Description Form

58. Course Name:					
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):					
5HOURS/3.5 UNITS					
64. Course administrator's name (mention all, if more than one name)					
Lacturer . Mohammed Majid ABED Email: mohammed.abed@uoanbar.edu.iq					
65. Course Objectives					
The beekeeping course, both practical and theoretical, aims to introduce students to the bee insect, what is the economic and medical importance of raising this insect, how to 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. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Initial knowledge about bees	the introduction Development and breeding of bees and signed by the animal kingdom and its types	Lecture	Quiz

			Taxonomic position of bees in the animal kingdom Beekeeping in Iraq Breeds of bees in Iraq		
2	5	Knowledge of beekeeping areas and life behavior	The best beekeeping areas in Iraq Sources of nectar and pollen The life behavior of honey bees The life cycle of honey bees mating behavior egg laying behavior	Lecture	quiz
3	5	Know the divisions and ages of the bee insect	Periods of immature roles for honeybees larval stage virgins stage adult stage Formal traits between queens, workers, and male	Lecture	quiz
4	5	Knowing the economic importance of beekeeping	The economic importance of beekeeping Honey and its benefits Royal food and its benefits Wax and its benefits Pollen and its benefits Bee venom and its benefits Propolis and its benefits	Lecture	quiz
5	5	Know the behavior of mating and laying eggs	Honey bee brood production Economical plant pollination Production of fertilized queens and divisions business of individuals Queen's business Housework work	Lecture	quiz
6	5	Knowing the work of the workers throughout	The work of the field workers collect nectar pollen collection Pollen collection	Lecture	quiz

		the year	mechanism collecting water water use		
7	5	Learn about the external anatomy of a honey bee	External anatomy of a honey bee The head and its appendages The chest and its appendages The abdomen and its appendages the Queen female kingdom Factors affecting the construction of royal houses Queen production supplies Conditions of the nanny sect Breeding of virgin queens queen production	Lecture	quiz
8	5	Learn about the methods and purpose of artificial feeding	robbery industrial feeding nutrition purposes Signs of a nutritional deficiency types of nutrition Important notes on nutrition Feeding times and concentrations of nutrient solutions types of food	Lecture	quiz
9	5	Recognize the trapping and ways to prevent	natural reproduction (scattering) When does expulsion happen? Reasons for the occurrence of swarming swarming damage spurting marks Methods of preventing swarming	Lecture	quiz
10	5	Identifying late parcels and ways to keep parcels	late swarming expulsion and substitution Keeping and housing parcels Some cases of parcel	Lecture	quiz

			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 Evaluation

69. Learning and Teaching Resources

Required textbooks (curricular books any)	
Main references (sources)	Beekeeping for amateurs and beginners / Abdul Baq 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

Course Description Form

70.	Course Name:		
Computer applications 1			
71.	Course Code:		
AFC1933			
72.	Semester / Year		
First/ 2023–2024			
73.	Description Preparation Date:		
2024/1/25			
74. Available Attendance Forms:			
Personal presence			
75. Number of Credit Hours (Total) / Number of Units (Total)			
30/1 (practical only)			
76.	Course administrator's name (mention all, if more than one name)		
Name: Asst. Pro. Dr. Ahmed Abdulrahman Majid			
Email: ag.ahmed.abd-rahmman@uoanbar.edu.iq			
77.	Course Objectives		
Course Objectives	<ol style="list-style-type: none"> 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.	Teaching and Learning Strategies		
Strategy	<p>Knowledge and understanding Learn about the capabilities of printing, inserting images, tables, storing, and writing formatting.</p> <p>Subject-specific skills: Students can develop skills by gaining sufficient experience to produce Microsoft Word files in a sophisticated and artistic style.</p> <p>Teaching and learning methods: The student relies for his understanding and learning on in-person lectures during this academic year</p> <p>Evaluation methods: Through daily and monthly exams, homework, oral exams, attendance, and various activities</p> <p>thinking skills: The student relies on linking the topics of the lectures in order to provide a model answer that can benefit him in the monthly exams.</p> <p>General and transferable skills (other skills related to employability and personal development). The student can study the curriculum topics in a practical way to understand and comprehend the curriculum lectures through his visit to the laboratory.</p>		
79.	Course Structure		

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3		Computer basics	(theoretical)	Daily exam
2	3		Electronic computer (computer)	(theoretical)	Daily exam + homework
3	3		Classification of computers based on operating system	(theoretical)	Daily exam + homework
4	3		Computer's components	(theoretical)	Monthly exam
5	3		Computer box	(theoretical)	Daily exam
6	3		Ports	(theoretical)	Daily exam + homework
7	3		Number systems	(theoretical)	Daily exam + homework
8	3		Computer security and software licenses	(theoretical)	Monthly exam
9	3		Electronic hacking	(theoretical)	Daily exam
10	3		Operating Systems	(practical)	Daily exam + homework
11	3		Windows operating system	(practical)	Daily exam + homework
12	3		Taskbar	(practical)	Monthly exam
13	3		Performing operations on windows	(practical)	Daily exam
14	3		control Board	(practical)	Daily exam + homework
15	3		Add an account	(practical)	Daily exam + homework
16	3		Installing programs	(practical)	Monthly exam

80. Course Evaluation

Monthly exam 60%, daily exam 20%, homework 10%, attendance 10%.

81. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer applications book Microsoft Word
Main references (sources)	My practical experience is in the computer field
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

Course Description Form

1. Course Name:					
Applications of Computer2					
2. Course Code:					
AFC1947					
3. Semester / Year:					
First Semester/2023-2024					
4. Description Preparation Date:					
25/1/2024					
5. Available Attendance Forms:					
in-person learning					
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: Dr.Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq					
8. Course Objectives					
Course Objectives			<p>A-Ability to understand the principle of Excel program.</p> <p>B-Increasing the skills of students for using it to solve the problems.</p> <p>C-Ability the undergraduate students to use these skills in different fields.</p> <p>D-Ability the students to graph equations, inequalities and all function</p>		
9. Teaching and Learning Strategies					
Strategy		<p>A1 Analysis the data and understand how can you be ability to apply it by using the equations of excel program.</p> <p>A2. Testing these equations in the practical experimental.</p> <p>A3. Using equations to find great data for different variables with simple way and which spend less time and effort.</p> <p>A4. Ability to use suitable coordinates and scales in the problems, and graph it.</p> <p>A5. Ability of student to evaluate the problems, and writing the scientific reports.</p> <p>A6. The student can acquire the practical and scientific experience his specialized field it.</p>			
10. Course Structure					
Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation 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 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 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, show, zoom, window)
Fourteenth	2	applications for all tabs	review for all tabs	applications for all tabs	applications for all tabs
Exam of the third month					
11. Course Evaluation					
Practical Quiz 10%, Practical exam 40%, final exam (Practical only) 50%. Final degree from 100%.					
12. Learning and Teaching Resources					
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 journals, reports...)			Essentials of computers and library applications		
Electronic References, Websites			Microsoft Internet websites		

Course Description Form

13. Course Name:	
Applications of Computer3	
14. Course Code:	
AFC1929	
15. Semester / Year:	
First Semester/2023-2024	
16. Description Preparation Date:	
25/1/2024	
17. Available Attendance Forms:	
in-person learning	
18. Number of Credit Hours (Total) / Number of Units (Total)	
30/1 (practical only)	
19. Course administrator's name (mention all, if more than one name)	
Name: Asst. Pro. Dr. Ahmed Abdulrahman Majid Email: ag.ahmed.abd-rahmman@uoanbar.edu.iq	
20. Course Objectives	
Course Objectives	A-Ability to understand the principle of Excel program. B-Increasing the skills of students for using it to solve the problems. C-Ability the undergraduate students to use these skills in different fields. D-Ability the students to graph equations, inequalities and all function
21. Teaching and Learning Strategies	
Strategy	A1 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 Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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 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 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)	View tab	by computer	Definition the groups in view tab (workbook views, show, zoom, window)
Fourteenth	2	applications for all tabs	review for all tabs	applications for all tabs	applications for all tabs
Exam of the third month					

23. Course Evaluation

Practical Quiz 10%, Practical exam 40%, final exam (Practical only) 50%.
Final degree from 100%.

24. Learning and Teaching Resources

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 journals, reports...)	Essentials of computers and library applications
Electronic References, Websites	Microsoft Internet websites

Course Description Form

25. Course Name:					
Applications of Computer4					
26. Course Code:					
AFC1931					
27. Semester / Year:					
First Semester/2023-2024					
28. Description Preparation Date:					
25/1/2024					
29. Available Attendance Forms:					
in-person learning					
30. Number of Credit Hours (Total) / Number of Units (Total)					
30/1 (practical only)					
31. Course administrator's name (mention all, if more than one name)					
Name: Dr. Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq					
32. Course Objectives					
Course Objectives			A-Ability to understand the principle of Excel program. B-Increasing the skills of students for using it to solve the problems. C-Ability the undergraduate students to use these skills in different fields. D-Ability the students to graph equations, inequalities and all function		
33. Teaching and Learning Strategies					
Strategy		A1 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. Course Structure					
Week	Hours	Required	Unit or subject	Learning	Evaluation

		Learning Outcomes	name	method	method
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 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 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 (workbook views, show, zoom, window)
Fourteenth	2	applications for all tabs	review for all tabs	applications for all tabs	applications for all tabs

Exam of the third month

35. Course Evaluation

Practical Quiz 10%, Practical exam 40%, final exam (Practical only) 50%.
Final degree from 100%.

36. Learning and Teaching Resources

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 journals, reports...)	Essentials of computers and library applications
Electronic References, Websites	Microsoft Internet websites

Course Description Form

13- Course Name					
Principles of agricultural economics					
14- Course Code					
AFC1937					
15- Semester / Year:					
2023_2024					
16- Description Preparation Date: spring					
25-1-2024					
17- Available Attendance Forms: Direct					
Assistant Professor. Eyid Abbas Abdalltef					
18- Number of Credit Hours (Total) / Number of Units (Total):					
30/1 (practical only)					
19- Course administrator's name (mention all, if more than one name)					
20- Course Objectives					
Course Objectives			A- Providing the student with the basic principles of agricultural economics and general		
C- Introducing the most important branches and specializations of agricultural economy			B - Introducing students to the most important economic activities and functions carried out by the agricultural economy		
21- Teaching and Learning Strategies					
Strategy		5- Providing students with theoretical and practical scientific knowledge on the subject of Fiber Crops of all kinds.			
		6- Students benefit from practical experiences in the subject of Fiber Crops and its relationship to various growth factors and the conditions surrounding the plant.			
22- Course Structure					
Week	Hours	Unit name / course or topic	Unit or subject name	Learning method	Evaluation method
		Principles of agricultural			

		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 exam
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 Cotton		

12	5	The demand for agricultural products, its concept, factors affecting it, and the demand schedule and curve	Picking of Cotton		
13	5	The supply of agricultural products, its concept, the factors affecting it, and the supply schedule and curve	Flax		
14	5	The interaction of demand and supply in setting prices	Fertilization , Harvest Retting of Flax		
15	5	Exam	Natural Properties Flax		second month exam

23- 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.

24- Learning and Teaching Resources

Required readings:

A - Course book

B - other books

C - lectures

* Agricultural Economics - Dr. Abdel Wahhab Matar Al Dahery in 1980.

* Agricultural Economics - d. Salem Tawfiq Al-Najafi 1995.

*Agricultural economics theory and practice Dr. Raad Aidan Al-Atabi 2018.

Special requirements (including, for example, workshops, periodicals, software and websites)

Websites on the international network.

Social services (including, for example, guest lectures, professional training, and field studies)

- Learn about field studies
Find out about previous studies

Course Description Form

1. Course Name:					
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: dhurgham.farhan@uoanbar.edu.iq					
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					
<ol style="list-style-type: none"> 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. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	1- Entomology 2- class of insects 3- Characteristics of a class of insects 4- Evolution and Impossibility [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	Gryllotalpa 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	-1Schizaphis graminum -2Oria musculosa -3 Syringopais temperatella Study the life cycle, damage and control method	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	-1 Anisoplia austriaca -2 Zabrus morio -3 Phytophaga destructor Study the life cycle, damage and control method	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	

		method	the aphid corn		
8	5	-1 Leucania loreyi -2 Sesamia critica -3 Aphis craccivora Study the life cycle, damage and control method	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	-1 Aphis fabae -2 Bruchus rufimanus -3 Bruchidius incarnates -4 Cosmolyce boeticus -5 Phytomyza atricarnis Study the life cycle, damage and control method	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	-1 Aphis gossypii Clover -2 Bemisia gossypipetra (Bemisia tabaci) -3 Thrips tabaci Lind Study the life cycle, damage and control	Knowing the external appearance and symptoms of infection and control each of the cotton bug, cotton white fly and onion thrips	Lecture	

		method			
12	5	-1Oxycareus hyalinipennis cost -2 Spodoptera Littoralis (Boisd Study the life cycle, damage and control method	Knowing the external appearance and symptoms of infection and control of both the cottonseed bugs and the cotton leaf worm	Lecture	
13	5	-1 Pegomyia hoyoscyami -2Phyllotreta cruciferae -3 Myzus persicae Study the life cycle, damage and control method	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	-1 Spodoptera (Laphygma) exigua -2 Agrotis ipsilon -3 Heliothis armigera -4 Eris insulana Boisd Study the life cycle, damage and control method	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 Evaluation

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Field crop insects / Iyad Youssef Al-Haj Ismail Economic Insects / Ibrahim Kaddouri
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
General Mathematics					
2. Course Code:					
AFC1946					
3. Semester / Year:					
First Semester/2023–2024					
4. Description Preparation Date:					
25/1/2024					
5. Available Attendance Forms:					
in-person learning					
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: Dr.Bilal Yaseen Taher					
Email: ag.bilal.yaseen@Uoanbar.edu.iq					
8. Course Objectives					
Course Objectives			A-Ability to understand the principle of mathematical functions B-Increasing the skills of students using it to solve the problems C-Ability the undergraduate students to use these skills in different fields. D-Ability the students to graph equations, inequalities and all function		
9. Teaching and Learning Strategies					
Strategy		A1. 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 his specialized field.it.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	2	Analysis the 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, Homework	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			
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 white board, Homework	questions , discussions, and examples
Fourteenth	2	Testing these equations in the practical experimental.	Solve all homework and problems	on the white board, Homework 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 journals, reports...)	Understanding Basic Calculus, S.K.Chung, Wolfram, 2007, Hong Kong.
Electronic References, Websites	https://en.wikipedia.org/wiki/Function_(mathematics)

Course Description Form

1. Course Name:					
Field crops diseases					
2. Course Code:					
AFC1937					
3. Semester / Year: Second trimester third stage					
2023_2024					
4. Description Preparation Date: Contributes to the knowledge of plant disease					
25_1_2024					
5. Available Attendance Forms:					
Attendance					
6. Number of Credit Hours (Total) / Number of Units (Total):					
70 Hours					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Theyab A Farhan Email: ag.rashid_mashref@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives			Identify the most important pathogens that affect crop diseases, the mechanism of action of each of them, the differences between symptoms and signs, and methods of control and resistance to the disease.		
9. Teaching and Learning Strategies					
Strategy	A-Knowledge and Understanding B-A1- The concept of plant disease C-A2- The most important losses caused by plant diseases D-A3- Studying the most important pathogens (fungal, bacterial, viral and nematode). E-A4- Knowing the most important diseases that affect different cereal crops F-A 5- Knowing the most important diseases that affect oil crops G-A6- Knowing the most important diseases that affect fiber crops H-A 7- Identify the most important diseases that affect forage crops I-A8- Finding the best means to combat these disease				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Introduction to plant 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. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Books and scientific research specialized in plant pathology
Main references (sources)	Diseases of field crops. 1993. Sergeant A Hamad, Maysir Gerges, Kamel Salman

Course Description Form

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 Date:	
25/1//2024	
17. Available Attendance Forms:	
Presence	
18. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours 2 units per week	
19. Course administrator's name (mention all, if more than one name)	
Name: mohammed kareem shaker Email: ag.mohammed.kareem@uoanbar.edu.iq	
20. Course Objectives	
1-Preparing educated students with correct ideas 2- Instilling noble values and morals	3- Helping in writing scientific research objectives 4- Know the facts and not falsify them 5- Knowing the repressive methods used by the former regime
21. Teaching and Learning Strategies	
Strategy	1- Enabling students to obtain the intellectual framework 2- Preparing students with a correct culture 3- Instilling and preserving the principles of patriotism 4- Developing the intellectual side of students 5- Vocabulary formulation and its absence 6- Expanding cognitive awareness
22. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding an	Violation of rights a	My presence	the exam
2	2	learning	freedoms	My presence	the exam
3	2	skills developmen	A descriptive overview	My presence	the exam
4	2	Know the facts	of political systems	My presence	the exam
5	2	Knowledge of sou	The Baathist regime's	My presence	the exam
6	2	principles	violation of rights and	My presence	the exam
7	2	Knowledge and	freedoms	My presence	the exam
8	2	awareness	The impact of the	My presence	the exam
9	2	Learn high values	behavior of the forme	My presence	the exam
10	2	raising awareness	Baathist regime on	My presence	the exam
11	2	Knowledge and	the society	My presence	the exam
12	2	perception	The impact of the	My presence	the exam
13	2	Crystallization of	transitional period	My presence	the exam
14	2	ideas	The psychological fiel	My presence	the exam
15	2	Mind developmen	+ the social field	My presence	the exam
		Learn the facts	Religion and state	My presence	the exam
		Brief and learn	First month exam	My presence	
		Discrimination	Culture, media, and th		
		Understanding an	militarization of socie		
		perception	The impact of		
		The right style	oppression and wars		
			the environment and		
			population		
			The use of		
			internationally		
			prohibited weapons a		
			environmental pollut		
			Scorched earth policy		
			drying of the marshes		
			Destruction of the		
			agricultural and anim		
			environment		
			Mass graves		
			Second month exam		

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	

Course Description Form

1. Course Name:					
Arabic					
2. Course Code:					
BRAL104					
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: mohammed kareem shaker					
Email: ag.mohammed.kareem@uoanbar.edu.iq					
8. Course Objectives					
1- Preparing students, including the Arabic language			3–Assistance in writing scientific research in objective Arabic 4– Familiarity with Arabic language vocabulary and correct spelling 5– Knowing the common mistakes		
2- Instilling the values of the Arabic language in the hearts of students					
9. Teaching and Learning Strategies					
Strategy	1- Enabling students to obtain the intellectual framework for the Arabic language subject 2- Preparing students linguistically and educationally 3- A solid knowledge of the Arabic language vocabulary that enables the student formulate Arabic vocabulary 4- Avoid spelling mistakes 5- Correct pronunciation of some vocabulary 6- Expanding cognitive awareness				
10. Course Structure					
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. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Arabic language books
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

25. Course Name					
Land cultivation					
26. Course Code:					
AFC1959					
27. Spring semester/ Autumn semester					
2023_2024					
28. The date this description was prepared is					
25-1-2024					
29. Available Attendance Forms:					
morning and evening, 95% morning and 75% evening					
30. Number of Credit Hours (Total) / Number of Units (Total)					
Five hours of theory + practical					
31. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Omar Ismail Mohsen					
32. Course Objectives					
<ul style="list-style-type: none"> 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 and types of culture, and future plans to avoid its risks. 					
33. Teaching and Learning Strategies					
Strategy					
34. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical practical		The first lecture: factors of crop production, food production and population growth.		Daily exam participation in lesson + written scientific reports monthly exams
2	2 theoretical		Second lecture: Carbon metabolism in crop plants		

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

35. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
36. Learning and Teaching Resources					
Required textbooks (methodology, if any) Land cultivation, F			Dr. Medhat Majeed Al-Sahuki		
Main references (sources) - Al-Sahuki, Medhat Majeed. 19			Cultivation of degraded lands. College of Agriculture - University 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		
Ahmed, Riyad Abdel Latif. 1984. Water in plant life. Bc			Directorate. University of Al Mosul. Iraqi Republic. On p. 512.		
-Al-Zubaidi, Ahmed Haider. 1989. Soil salinity, theoretical			applied foundations, 7th edition. Dar Al-Hekma, University of Baghdad. Ministry of Higher Education and Scientific Research. Iraq. On page 308. 3		
-Al-Awadi, Jassim Muhammad. 2011. Reclamation			cultivation of saline lands. Our Environment Magazine. 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		

Course Description Form

1. Course Name:	
Field crops management.	
2. Course Code:	
AFC1962	
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.iq	
8. Course Objectives	
Course Objectives	<p>1-Determining the human role in providing food and population increase and the consequences of increasing the food gap, and productivity factors.</p> <p>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.</p> <p>3 -Knowledge of the management of the field crops before and after planting and the various agricultural processes accompanying them.</p> <p>4-Shed light on the types of irrigation canals and irrigation methods and reduce irrigation losses.</p> <p>5-Calculation of plant density and seed quantities according to the crop, the role of plant density in intercepting light and increasing.</p> <p>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.</p> <p>7-Paying attention to adding soil conditioners - using hemp and green manure and adding gypsum and agricultural sulfur to repair saline and saline-alkaline soil</p>
9. Teaching and Learning Strategies	
Strategy	<p>1-Providing students with the basics and additional topics related to previous learning outcomes of skills, to solve scientific problems.</p> <p>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.</p>

- 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 rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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 subject 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 board	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 stream 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.	=
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 d to know the effect of nitrogen Dose.	=

7	5	Fertilization - the role of main, secondary and rare fertilizers in growth, yield increase symptoms of element deficiency on the plant, the relationship of the 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 elements.	field crops management	Cultivation of a crop with several doses of (NPK) to compare it with nitrogen fertilization only.	=
8	5	Seeds - seed quality, seed quantities plant densities and their calculations.	field crops management	Cultivate a crop and irrigate it with 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 animal and green manure and the addition of gypsum and agricultural sulfur to repair saline and alkaline soils and its relationship to electrical conductivity and pH of the soil solution and the readiness of 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.	=

		importance to the type of crop. relationship of the nature of growth in each method and reflection on the growth of the crop.			
13	5	Crop adaptation - temperature, light, quality, intensity and duration, 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 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 recommended 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 organs and their functions – plant cell and its organelles, root, stem, leaves, leaf area. Maturity harvest - how to harvest and appropriate time for the crop, estimate the losses from the crop. Storage of the yield - type stores and storage, storages of seeds and grains and their specifications and storage conditions in them such temperature, humidity and pesticides, methods of drying the yield in the field and in the store, titration of moisture in the seeds before and at storage.	field crops management	Each student presents his report to the students, discusses it and gives it a grade.	=

11. Course Evaluation

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

12. Learning and Teaching Resources

<p>Required Textbooks (curricular books, if any)</p>	<p>1-The scientific basis for the management, production and improvement of field crops. Dr. Iyad Hussein Al-Muaini and Prof. Muhammad Awaid Ghadeer Al-Obaidi. College of Agriculture - University of Anbar, 2018.</p> <p>2- Introduction to plant physiology. Dr.. Mrs. Omar Al-Huwairis and Dr. Tayeb Haj Ali Ahmed. Khartoum . Khartoum University Publishing House, 2010.</p> <p>3- A strategy for managing and irrigating field crops. NS. Dr.. Nemat Abdel Aziz Nouredine and I. Dr.. Mohamed Fawzy Hamed and d. Hani Saber Saudi. Academic Library. Cairo . Arab Republic of Egypt, 2013.</p> <p>4- Plant nutrition guide. Dr.. Youssef Muhammad Abu Dahi and d. Supporter Ahmed Younis. College of Agriculture - University of Baghdad, 1988.</p> <p>5- Reclamation and improvement of desert lands. Dr.. Maher Georgy Naseem. Faculty of Agriculture - Saba Pasha - Alexandria University (first edition). 2006 .</p> <p>6- Production and improvement of field crops (part one). Abdul Hamid Ahmed Al-Younes, University of Baghdad - College of Agriculture, 1993.</p> <p>7- Grain production. Mr. Dr. Abdel Hamid Mohamed Hassanein, Faculty of Agriculture - Azhar University, Arab Republic of Egypt 2019.</p> <p>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.</p> <p>10- Lectures on crop management. so. Medhat Majeed Al-Sahoki, College of</p>
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	Agriculture - University of Baghdad, 2012.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References Websites	11 - Lectures and statistics from the cluster network.

Course Description Form

37. Course Name					
Principles of agricultural economics					
38. Course Code:					
AFC1945					
39. Spring semester/ Autumn semester					
2023_2024					
40. The date this description was prepared is					
25-1-2024					
41. Available Attendance Forms:					
morning and evening, 95% morning and 75% evening					
42. Number of Credit Hours (Total) / Number of Units (Total)					
Five hours of theory + practical					
43. Course administrator's name (mention all, if more than one name)					
Name: Assistant Professor. Eyid Abbas Abdalltef					
Email:					
44. Course Objectives					
<ul style="list-style-type: none"> • 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 and types of culture, and future plans to avoid its risks. 					
45. Teaching and Learning Strategies					
Strategy					
46. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical practical		Economics, the most important basic branches, and the relationship of agricultural economics to it		Daily exam participation in lesson + write scientific reports

					monthly exams
2	2 theoretical practical		The most important branches of agricultural economics and the economic problem and its characteristics		
3	2 theoretical practical		The role and status of agricultural economic activity + aspects of economic life		
4	2 theoretical practical		Economic resources, invested capital and agricultural costs		
5	2 theoretical practical		Analysis of agricultural costs + agricultural income		
6	2 theoretical practical		Analysis of agricultural costs + agricultural income		
7	2 theoretical practical		Economics of agricultural production production function and types		
8	2 theoretical practical		Exam		
9	2 theoretical practical		stages of agricultural production		
10	2 theoretical practical		The isoquant curve, its properties, and how to draw it		
11	2 theoretical practical		Replacement or replacement and reaching the lowest cost		
12	2 theoretical practical		Agricultural prices and types of fluctuations		
13	2 theoretical practical		The demand for agricultural products, its concept, factors affecting it, and the demand schedule and curve		
14	2 theoretical practical		The supply of agricultural products, its concept, the factors affecting it, and the supply schedule and curve		
15	2 theoretical practical		The interaction of demand and supply in setting prices		

47. Course Evaluation

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

48. Learning and Teaching Resources

<p>* 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.</p>	<p>.</p>
<p>Websites on the</p>	<p>.</p>
<p>- Learn about field studies</p>	<p>.</p>

Course Description Form

49. Course Name					
Principle of horticulture					
50. Course Code:					
AFC1919					
51. Spring semester/ Autumn semester					
2023_2024					
52. The date this description was prepared is					
25-1-2024					
53. Available Attendance Forms					
: morning and evening, 95% morning and 75% evening					
54. Number of Credit Hours (Total) / Number of Units (Total)					
Five hours of theory + practical					
55. Course administrator's name (mention all, if more than one name)					
Name: Assistant Professor Ahmeed faehan					
56. Course Objectives					
<ul style="list-style-type: none"> • 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 and types of culture, and future plans to avoid its risks. 					
57. Teaching and Learning Strategies					
Strategy					
58. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		Daily exam participation in lesson + written scientific reports monthly exams
2	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		

3	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
4	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
5	2 theoretical practical		First month exam		
6	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
7	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
8	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
9	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
10	2 theoretical practical		Second month exam		
11	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
12	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
13	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
14	2 theoretical practical		Electronic lectures and practical application in laboratories and fields		
15	2 theoretical practical		The interaction of demand and supply in setting prices		

59. Course Evaluation

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

60. Learning and Teaching Resources

- 1- Al-Allaf, I. H. I. Principles of Horticulture and Garden Engineering 2017. College of Agriculture and Forestry - University of Mosul .
- 2- Al-Allaf, I. H. I. and I. T. Shayal Al-Alam 2017.

<p>Fundamentals of horticulture and landscaping. College of Agriculture and Forestry - University of Mosul</p> <p>3- Amin, S. K. M. and N. Khalil 2014. Principles Horticulture. College of Agricultural Engineering Sciences - University of Baghdad.</p>	
<p>(include foreexample workshops, periodicals, IT softv</p>	
<p>- Learn about field studies</p>	

Course Description Form

1. Course Name:					
Organic chemistry					
1. Course Code:					
AFC1952					
2. Semester / Year:					
2023 _2024 – first semester					
3. Description Preparation Date:					
2024-1-25					
4. Available Attendance Forms:					
Attendance live					
5. Number of Credit Hours (75) / Number of Units (3.5)					
75Horse					
6. Course administrator's name (Dr. Maher Ahmed Abed)					
Name: Dr. Maher Ahmed Abed					
Email:					
7. Course Objectives					
Course Objectives			Explanation of cyclic and open aphotatic compounds Classification of active compounds according to active group Preparation of some organic compounds Naming organic compounds		
8. Teaching and Learning Strategies					
Strategy					
9. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	Organic chemistry	Preparation of cyclic acid - its purpose - scientific idea - method of work - calculations - drawing of the device	lectures Theo. And EXP.	Daily and quart exam
2	2+3	Organic chemistry	Preparation of alkyl halide - purpose of the experiment - scientific idea - method of work - calculations -	lectures Theo. And EXP.	Daily and quart exam

			drawing of the device.		
3	2+3	Organic chemistry	Alcohols - purpose of the experiment - scientific idea - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
4	2+3	Organic chemistry	Acetone - purpose of the experiment - scientific idea - method of work - calculations - drawing of the device. First month exam	lectures Theo. And EXP.	Daily and quart exam
5	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
6	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
7	2+3	Organic chemistry	First month exam	lectures Theo. And EXP.	Daily and quart exam
8	2+3	Organic chemistry	Study of the properties of aldehydes and ketones - introduction - method of work - calculations - drawing of the device	lectures Theo. And EXP.	Daily and quart exam
9	2+3	Organic chemistry	Preparation of caroxylic acid - purpose of the experiment - type of reaction - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
10	2+3	Organic chemistry	Preparing esters - purpose of the experiment - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
11	2+3	Organic chemistry	Preparing aspirin - purpose of the experiment - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
12	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
13	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
14	2+3	Organic chemistry	Second month exam	lectures Theo. And EXP.	Daily and quart exam
15	2+3	Organic chemistry	Review	lectures Theo. And EXP.	Daily and quart exam

10. Course Evaluation

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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Organic chemistry for agriculture college students
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Types of Chemical Bonds. Dummies. Retrieved January 4, 2021, from
Electronic References, Websites	-

Course Description Form

61. Course Name:					
Weed Biology					
62. Course Code:					
AFC1943					
63. Semester / Year: Seasonal / 1st attempt					
2023_2024					
64. Description Preparation Date:					
25 1/ 2024					
65. Available Attendance Forms:					
Weekly					
66. Number of Credit Hours (45) Number of Units (3)					
75 h.					
67. Course administrator's name (mention all, if more than one name)					
Name: Ahmed A. Almarie Email: ag.ahmed.abdalwahed@uoanbar.edu.iq					
68. Course Objectives					
Course Objectives		Students acquire scientific knowledge in categorizing and diagnosing weeds and knowing their damages. Students benefit by identifying the types of weed, their damages, uses in agricultural technology.			
69. Teaching and Learning Strategies					
Strategy		1. lecture. 2. Explanation and clarification. 3. Use of electronic means of clarification (Data show). 4. practical lessons in agricultural fields			
70. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Oral	Introduction in weeds	Oral & power point	Weekly & 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 Exam
7	5	Oral	Weed benefit	Oral & power point	Weekly & monthly Exam
8	5	Oral	Weed distribution	Oral & power point	Weekly & monthly Exam
9	5	Oral	Weed Competition	Oral & power point	Weekly & monthly Exam
10	5	Oral	Solanum elaeagnifolium (Silverleaf nightshade)	Oral & power point	Weekly & monthly Exam
11	5	Oral	water hyacinths	Oral & power point	Weekly & monthly Exam
12	5	Oral	Common & invasive weed types	Oral & power point	Weekly & monthly Exam
13	5	Oral	Exploiting weeds for sustainable development	Oral & power point	Weekly & monthly Exam
14	5	Oral	Field and orchards operation activity	Oral & power point	Weekly & monthly Exam
15	5	Oral	Field and orchards operation activity	Oral & power point	Weekly & monthly Exam

71. Course Evaluation

daily oral, monthly, and written exams, reports etc

72. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Korres, N. E., Burgos, N. R., & Duke, S. O. (Eds.). (2018). Weed control: sustainability, hazards, and risks in cropping systems worldwide. CRC Press. 2- Gressel, Jonathan. Molecular biology of weed control. Vol. 1. CRC Press, 2002.
Main references (sources)	Weed Control Methods. Ghanem Saadallah Al-Hassawi and d. Baqer Abdul Khalaf Al-Jubouri. Ministry Higher Education and Higher Education - University Baghdad. 1982.
Recommended books and references (scientific journals, reports...)	- 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. - Weeds and Principles of control Methods. Dr. Salem Hammadi Antar Al-Obaidi. Ministry of Higher Education, Education Sciences a. 2009
Electronic References, Websites	www.weed science.com

Course Description Form

73.Course Name:	
Fundamentals of Food Manufacturing	
74.Course Code:	
AFC1957	
75.Semester / Year:	
2023_2024	
76.Description Preparation Date:	
25/1/2024	
77.Available Attendance Forms:	
Mandatory	
78.Number of Credit Hours (Total) / Number of Units (Total):	
75 h.	
79.Course administrator's name (mention all, if more than one name)	
Name: Dr. Fadwa Waleed Abdulqahar and Dr. Sari Ali Hussein Email: ag.fadwa.waleed@uoanbar.edu.iq	
80.Course Objectives	
Course Objectives	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 Learning Strategies	
Strategy	1. Developing teaching programs in coordination with higher departments. 2. Developing teaching curricula similar to the work environment.

3. Sending students to departments and directorates for the purpose of conducting summer school.
4. Assigning students to conduct research and reports related to the course.
5. Assigning students to use of libraries and websites to collect sources on course topics.

82. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	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 of Food Manufacturing	Preservation using high temperature and canning	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.
4	5	Fundamentals of Food Manufacturing	Packaging materials	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.
5	5	Fundamentals of Food Manufacturing	Preservation by drying	Daily, monthly, and quarterly exams + grades awarded for extracurricular activities,	Delivering theoretical lectures and conducting class discussions to stimulate thinking and

				discussions, and class participation.	conclusion using brainstorming and positive reinforcement, and conducting extracurricular activities.
6	5	Fundamentals of Food Manufacturing	Food preservation by pickling and pickles 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.
7	5	Fundamentals of Food Manufacturing	Preservation with sugar and salt solutions	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.
8	5	Fundamentals	The 1 st monthly exam	Daily,	Delivering

		of Food Manufacturing		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 extracurricular activities.
14	5	Fundamentals of Food Manufacturing	Food additives	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.
15	5	Fundamentals of Food Manufacturing	The 2 nd monthly exam	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.
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83.Course Evaluation

- 1- Conducting tests during the semester and asking questions to students to determine their understanding of the subject.
- 2- Conduct a research discussion at the 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 find solutions.

84.Learning and Teaching Resources

Required textbooks (curricular books, any)	Hassan, Abdul Ali Mahdi and Al-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 references (scientific journals, reports...)	Al-Samahi, Salah Kamel et al., 2011. Food Technology. Amman, Dar Al Masirah for Publishing, Distribution and Printing.
Electronic References, Websites	Many references from the Internet

Course Description Form

1. Course Name:					
English language 3					
2. Course Code:					
AFC1919					
3. Semester / Year: Seasonal / 1st attempt					
2023_2024					
4. Description Preparation Date:					
25_1_2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (30) Number of Units (1.5)					
30 hours 2 units per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Imad Mahmood Ali Email: ag.imad.mahmood@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives		Students learn English language skills through several parts including reading, writing, pronunciation, and listening skills. Also, part of the curriculum includes the student's specialized language, which is based on English for a special purpose which is agriculture.			
9. Teaching and Learning Strategies					
Strategy		1. lecture. 2. Explanation and clarification. 3. Use electronic technology for clarification (PowerPoint, videos, etc.).			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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
4	2	Oral	Telling tales Past simple continuous (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
5	2	Oral	Doing the right things Present continuous (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
6	2	Oral	I just love it Future forms (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
7	2	Oral	Check Point	Oral & power point	Weekly & monthly Exam
8	2	Oral	It's a wonderful word Present tense (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
9	2	Oral	Get happy Simple tense (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
10	2	Oral	Making conversation (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
11	2	Oral	Reading and speaking (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
12	2	Oral	Check Point	Oral & power point	Weekly & monthly Exam
13	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
14	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
15	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam

11. Course Evaluation

daily oral, monthly, and written exams, reports etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	headway intermediate (Student book) 5th edition
Main references (sources)	Plant morphology book
Recommended books and references (scientific journals, reports...)	Free Online English Lessons Improve Your English Speaking
Electronic References, Websites	https://online.fliphtml5.com/obpqy/auii/index.html

Course Description Form

1. Course Name:					
English language4					
2. Course Code:					
AFC1920					
3. Semester / Year: Seasonal / 1st attempt					
2023_2024					
4. Description Preparation Date:					
25 /1/ 2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (45) Number of Units (1.5)					
30 hours 2 units per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Imad Mahmood Ali Email: ag.imad.mahmood@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives		Students learn English language skills through several parts including reading, writing, pronunciation, and listening skills. Also, part of the curriculum includes the student's specialized language, which is based on English for a special purpose which is agriculture.			
9. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. lecture. 2. Explanation and clarification. 3. Use electronic technology for clarification (PowerPoint, videos, etc.). 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Oral	Who am I	Oral & PowerPoint	Weekly & monthly Exam
2	2	Oral	Questions and negative (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
3	2	Oral	I will Graduate Future Forms	Oral & PowerPoint	Weekly & monthly Exam

			(ESP)Photosynthesis		
4	2	Oral	I have finished my study Present perfect form (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
5	2	Oral	So am I Model auxiliary verbs (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
6	2	Oral	Where are you going Model auxiliary verbs (ESP)Photosynthesis	Oral & power point	Weekly & monthly Exam
7	2	Oral	Check Point	Oral & PowerPoint	Weekly & monthly Exam
8	2	Oral	It's a wonderful word Comparative and superlative (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
9	2	Oral	Wher are you from Speaking and listening (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
10	2	Oral	Making conversation Vocabulary and grammar (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
11	2	Oral	Reading and speaking (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
12	2	Oral	Check Point	Oral & PowerPoint	Weekly & monthly Exam
13	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
14	2	Oral	Practicing	Oral & PowerPoint	Weekly & monthly Exam
15	2	Oral	Practicing	Oral & PowerPoint	Weekly & monthly Exam

11. Course Evaluation

daily oral, monthly, and written exams, reports etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	headway Upper- intermediate (Student book) 5th edition
Main references (sources)	Plant Physiology
Recommended books and references (scientific journals, reports...)	Free Online English Lessons Improve Your English Speaking
Electronic References, Websites	https://online.fliphtml5.com/obpqy/auii/index.htm

Course Description Form

1. Course Name					
English language 1					
2. Course Code:					
AFC1917					
3. Semester / Year: Seasonal /1st attempt					
2023_2024					
4. Description Preparation Date:					
25 /1 /2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (30) Number of Units (1.5)					
30 hours 2 units per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahmed A. Almarie Email: ag.ahmed.abdalwahed@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives		Students learn English language skills through several parts including reading, writing, pronunciation, and listening skills. Also, part of the curriculum includes the student's specialized language, which is based on English for a special purpose which is agriculture.			
9. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. lecture. 2. Explanation and clarification. 3. Use electronic technology for clarification (PowerPoint, videos, etc.). 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Oral	Where I live There is , are , any	Oral & power point	Weekly & monthly Exam
2	2	Oral	Happy birthday Saying years	Oral & power point	Weekly & monthly Exam
3	2	Oral	Question Marks	Oral & power point	Weekly & monthly Exam

4	2	Oral	We had GOOD TIME simple Past (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
5	2	Oral	personal information (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
6	2	Oral	It's my life Positive adjective forms (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
7	2	Oral	Check Point	Oral & power point	Weekly & monthly Exam
8	2	Oral	Everyday The Time (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
9	2	Oral	Greetings (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
10	2	Oral	If, I (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
11	2	Oral	Vocabulary and Reading (ESP)Plant parts	Oral & power point	Weekly & monthly Exam
12	2	Oral	Check Point	Oral & power point	Weekly & monthly Exam
13	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
14	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
15	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam

11. Course Evaluation

daily oral, monthly, and written exams, reports etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	headway Beginner (Student book) 5th edition
Main references (sources)	Plant morphology book
Recommended books and references (scientific journals, reports...)	Free Online English Lessons Improve Your English Speaking
Electronic References, Websites	https://online.fliphtml5.com/obpqy/auii/index.html

Course Description Form

1. Course Name:					
English language2					
2. Course Code:					
AFC1916					
3. Semester / Year: Seasonal /1st attempt					
2023_2024					
4. Description Preparation Date:					
25 /1 /2024					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (45) Number of Units (1.5)					
30 hours 2 units per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahmed A. Almarie Email: ag.ahmed.abdalwahed@uoanbar.edu.iq					
8. Course Objectives					
Course Objectives		Students learn English language skills through several parts including reading, writing, pronunciation, and listening skills. Also, part of the curriculum includes the student's specialized language, which is based on English for a special purpose which is agriculture.			
9. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. lecture. 2. Explanation and clarification. 3. Use electronic technology for clarification (PowerPoint, videos, etc.). 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Oral	Model verbs	Oral & PowerPoint	Weekly & monthly Exam
2	2	Oral	Verb patterns (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
3	2	Oral	Vegetable & Fruits Future Forms	Oral & PowerPoint	Weekly & monthly Exam

			(ESP)Photosynthesis		
4	2	Oral	The weather Present perfect form (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
5	2	Oral	I want to talk Model auxiliary verbs (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
6	2	Oral	Have to, should, and Must Model auxiliary verbs (ESP)Photosynthesis	Oral & powerpoint	Weekly & monthly Exam
7	2	Oral	Check Point	Oral & PowerPoint	Weekly & monthly Exam
8	2	Oral	Past Perfect Comparative and superlative (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
9	2	Oral	Feelings Speaking and listening (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
10	2	Oral	Right word wrong word (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
11	2	Oral	Reading and speaking (ESP)Photosynthesis	Oral & PowerPoint	Weekly & monthly Exam
12	2	Oral	Check Point	Oral & PowerPoint	Weekly & monthly Exam
13	2	Oral	Practicing	Oral & power point	Weekly & monthly Exam
14	2	Oral	Practicing	Oral & PowerPoint	Weekly & monthly Exam
15	2	Oral	Practicing	Oral & PowerPoint	Weekly & monthly Exam

11. Course Evaluation

daily oral, monthly, and written exams, reports etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	headway Pre- intermediate (Student book) 5th edition
Main references (sources)	Plant Physiology
Recommended books and references (scientific journals, reports...)	Free Online English Lessons Improve Your English Speaking
Electronic References, Websites	https://online.fliphtml5.com/obpqy/auii/index.html

Course Description Form

1. Course Name:	
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 Objectives	<p>Providing the student with basic knowledge of agricultural extension concepts</p> <p>Providing the student with the general concepts and principles of agricultural extension,</p> <p>Providing the student with the objectives of agricultural extension,</p> <p>Providing the student and introducing him to how to plan agricultural extension programs</p>
9. Teaching and Learning Strategies	
Strategy	A theoretical clarification of the vocabulary of the subject, using data to understand the scientific subject

Using graphs in scientific material, student participation in lecture
Conduct daily and monthly tests.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Knowledge and understanding Skill for 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 extension	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

		Skill for the subject	process of communicating with audiences	vocabulary Subject	
9	5	Knowledge and understanding Skill for the subject	Factors affecting communication effectiveness	theoretically Practical vocabulary Subject	Examination, reporting
10	5	Knowledge and understanding Skill for the subject	Rural leadership	theoretically Practical vocabulary Subject	Examination, reporting
11	5	Knowledge and understanding Skill for the subject	Adoption and spread of modern technologies in agriculture	theoretically Practical vocabulary Subject	Examination, reporting
12	5	Knowledge and understanding Skill for the subject	Planning extension programs	theoretically Practical vocabulary Subject	Examination, reporting
13	5	Knowledge and understanding Skill for the subject	Agricultural extension methods and extension tools	theoretically Practical vocabulary Subject	Examination, reporting
14	5	Knowledge and understanding Skill for the subject	Evaluation of extension programs	theoretically Practical vocabulary Subject	Examination, reporting
15	5	Knowledge and understanding Skill for the subject	Agricultural extension in Iraq and its stages of development	theoretically Practical vocabulary Subject	Examination, reporting

11. Course Evaluation

Daily exam, submission of reports, semester exam, final exam (total score 100)

12. Learning and Teaching Resources

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	
7. Course administrator's name (Dr.Ahmed Riyadh Abdulateef)	
8. Course Objectives	
Course Objectives	the students know what are the problems of the lands that need be reclaimed, namely saline, soda, gypsum, calcareous, san acidic, waterlogging and clay lands to be reclaimed
9. Teaching and Learning Strategies	
Strategy	<p>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.</p> <p>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.</p>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	The concept of land reclamation and its role in agricultural production	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
2	5	Program and stages of reclamation of saline 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 map and bringing soil model, draw a salinity map	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
5	5	Reclamation of lands affected by salinity and calculating the rate of washing	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
6	5	First month exam theory & practical	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
7	5	The mechanics of the movement of salts during 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 Soil 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 Reclamation	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
12	5	Gypsum Land Reclamation	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
13	5	Reclamation of limestone lands	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
14	5	Reclamation of desert and sandy lands	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
15	5	2 nd month exam theory & practical	Land reclamation	Lecture explanation	Daily and quarterly exams and activity
11. Course Evaluation					

Daily exam 5, reporting5, quarterly exam 40, Final Exam 50 (total score 100)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	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	

Course Description Form

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 corruption	3- Helping in writing scientific research objectively 4- Knowledge of the general rights and freedoms of the individual and society 1- Practical application of public rights and freedoms
9. Teaching and Learning Strategies	
Strategy	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 democracy among the individual and society 1- Developing students' cognitive awareness of the importance of human rights And democracy
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding an	Definition of human rights	My presence	the exam
2	2	learning		My presence	the exam
3	2	skills developmen	A historical overview of human rights	My presence	the exam
4	2	Correct spelling	Human rights in heaven religions	My presence	the exam
5	2	Know the errors		My presence	the exam
6	2	Knowledge and	The most important pu	My presence	the exam
7	2	awareness	rights and freedoms	My presence	the exam
8	2	Learn to parse	Human rights violations society	My presence	the exam
9	2	Learn to parse	Supporting internationa	My presence	the exam
10	2	Knowledge and	provisions and	My presence	the exam
11	2	perception	conventions	My presence	the exam
12	2	Learn Arabic	For human rights	My presence	the exam
13	2	Proper	Applications in the gene	My presence	the exam
14	2	pronunciation	rights of the individual	My presence	the exam
15	2	Learn the	Administrative corrupt	My presence	the exam
		differences	and ways to combat it	My presence	
		Brief and learn	Concepts of instilling		
		Discrimination	national values in socie		
		Understanding an	Democracy (definition -		
		perception	concept)		
		The right style	Democracy (historical		
			stages)		
			Difficulties in		
			implementing democra		
			in society		
			Distinguishing between		
			rights and democracy		
			Characteristics of a		
			democratic system		
			Advantages and		
			disadvantages of		
			democracy		
			Democracy applications		
			The election		
			Democratic Constitutio		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Human rights, children and democracy
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	