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 Kerbala

Faculty/Institute: Faculty of Agriculture

Scientific Department: Horticulture and landscape.

Academic or Professional Program Name: Bachelor Sciences in Agricultural

Final Certificate Name: Bachelor Sciences in Agricultural \Horticulture and Landscape

Academic System: semesters

Description Preparation Date: 7/ 3/2024

File Completion Date: 7/ 3/2024

Signature:
Head of Department Name:
Assist.Prof. Dr. Kadum Mohammed Abdullah
Date:

Signature:
Scientific Associate Name:
Prof. Dr. Sabah Ghazi Shareef
Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assist.Prof. Dr. Ali Nadhim Farhood

Date: 04\06\2024

Signature:

Approval of the Dean

Prof. Dr. Sabah Ghazi Shareef

Academic Program Description Form

University Name: **University of Kerbala**

Faculty/Institute: **Faculty of Agriculture**

Scientific Department: **Horticulture and landscape**.

Academic or Professional Program Name: **Bachelor Sciences in Agricultural**

Final Certificate Name: **Bachelor Sciences in Agricultural \Horticulture and Landscape**

Academic System: **semesters**

Description Preparation Date: **7/ 3/2024**

File Completion Date: **7/ 3/2024**

Signature:
Head of Department Name:
Assist.Prof. Dr. Kadum Mohammed Abdullah
Date:

Signature:
Scientific Associate Name:
Prof. Dr. Sabah Ghazi Shareef
Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assist.Prof. Dr. Ali Nadhim Farhood

Date:

Signature:

Approval of the Dean

Prof. Dr. Sabah Ghazi Shareef

1. Program Vision

Achieving outstanding performance in increasing high-quality productivity in agriculture through innovation and application of the latest sustainable agricultural technologies and practices.

2. Program Mission

The department provides high-quality education and solid research in the field of horticultural plant cultivation, with the aim of training and qualifying distinguished agricultural cadres who contribute to the development of the agricultural sector through innovation and sustainability.

3. Program Objectives

1- Education: The department aims to graduate cadres specialized in agricultural sciences in the field of establishing, cultivating and developing fruit and vegetable orchards and establishing nurseries for the cultivation of ornamental plants and others on sound scientific and international foundations in accordance with curricula prepared by the Ministry of Higher Education and Scientific Research for this purpose.

2- Scientific research: Conducting scientific research directed at increasing the production of horticultural crops, solving agricultural problems, and developing new agricultural techniques in horticultural sciences.

3- Service: The department aspires to develop the reality of horticulture in the governorate through joint research with relevant and concerned parties, holding continuing education courses, and giving lectures in many forums in order to raise horticultural awareness, as well as participating in agricultural conferences at the local and foreign levels.

4. **Program Accreditation**
There is no

5. **Other external influences**
Laboratories, the field, the library, the Internet, agricultural and industrial institutions, agricultural projects, and summer training

6. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements	**17**	**27**		**Course Academic**
College Requirements	**30**	**96**		
Department Requirements	**18**	**62**		
Summer Training	**Interpolation**			
Other	**Total number of courses = 65 and units = 185**			

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

7. Program Description				
Credit Hours		**Course Name**	**Course Code**	**Year/Level**
2	**practical**	**Computer Applications 1**	**U211**	**2023-2024 The first**
1	**theoretical**	**Democracy and Human Rights**	**U211**	
5	**theoretical+practical**	**principle of Soil Science**	**POSC1**	
5	**theoretical+practical**	**Principle of Field Crops**	**FCPR1**	
2	**theoretical**	**1 English Language**	**UO1**	
5	**theoretical+practical**	**Organic chemistry**	**ORCH1**	
2	**theoretical**	**Mathematics**	**MATH1**	
5	**theoretical+practical**	**Surveying Principles**	**SURV1**	
2	**practical**	**Computer Applications 2**	**UO1**	
5	**theoretical+practical**	**Principle of Animal Production**	**POAP1**	
5	**theoretical+practical**	**Engineering Drawing**	**ENDR1**	

5	theoretical+practical	Agricultural Machinery and Equipment	AMEQ1	
5	theoretical+practical	Botany	BOTA1	
5	theoretical+practical	Principle of Food Processing	POFI1	
4	theoretical+practical	Statistics	STAT1	
2	theoretical	Principle of Agricultural Economics	POAE1	
3	practical	Computer Applications 3	U02	2023-2024 the second
2	theoretical	2 English Language	U02	
5	theoretical+practical	Plant Nutrition	PLNU2	
5	theoretical+practical	Principle of Landscape Design	POLG2	
5	theoretical+practical	Plant Anatomy	PLAN2	
5	theoretical+practical	Plant Genetics	GETE304	
5	theoretical+practical	Plant Physiology	PLPH2	
5	theoretical+practical	Horticultural Pests Insects	HOPE2	
5	theoretical+practical	Agricultural Extension	AGEX2	
3	practical	Computer Applications 4	UO2	
5	theoretical+practical	Plant Ecology	PLEC2	
5	theoretical+practical	Biochemistry	BICH2	
5	theoretical+practical	Organic Farming	ORFA2	
5	theoretical+practical	Microbiology	MICR2	
5	theoretical+practical	Nurseries and Propagation	NUPR2	
5	theoretical+practical	Agricultural Weed Control	AGWC2	
2	theoretical	Arabic Language	UOP213	
1	theoretical	Baath Party crimes	BAAC102	
5	theoretical+practical	Design and Analysis of Experiments	STED3	2023-2024 Third
5	theoretical+practical	Irrigation and Drainage	IRDR3	
5	theoretical+practical	Horticultural Plant Pathology	HPPA3	
5	theoretical+practical	Basics of Deciduous Fruit 1	DFPR3	
5	theoretical+practical	Ornamental Plants 1	ORPL3	
5	theoretical+practical	Medicinal and Aromatic Plants	MAPL3	
5	theoretical+practical	Winter Vegetables	POWV3	
5	theoretical+practical	Summer Vegetables	POSV3	
5	theoretical+practical	Ornamental Plant 2	ORPL3	
5	theoretical+practical	Basics of Deciduous Fruit 2	DFPR3	
5	theoretical+practical	Breeding of Horticultural Plants	BOHP3	
5	theoretical+practical	Plant Growth Regulators	PGRE3	
5	theoretical+practical	Beekeeping	APTE309	
2	theoretical	English Language 3	U03	
1	theoretical	Seminar	SEMI4	2023-2024 Fourth
3	practical	Graduation Research Project 1	GRPR4	

5	**theoretical+practical**	**Plant Tissue Culture**	**PTCU4**	
5	**theoretical+practical**	**Protected Cultivation**	**PRCU4**	
5	**theoretical+practical**	**Post-harvest Physiology of Fruit**	**RSHC410**	
5	**theoretical+practical**	**Evergreen Fruit**	**EVFR4**	
4	**theoretical+practical**	**Farm Management**	**FAMA4**	
3	**practical**	**Graduation Research Project 2**	**GRPR402**	
5	**theoretical+practical**	**Production of Grapes**	**PGSF404**	
5	**theoretical+practical**	**Palm Production**	**PAPR406**	
5	**theoretical+practical**	**Plant Biotechnology**	**BIOT408**	
5	**theoretical+practical**	**Fertility and Fertilizer**	**SFFE4**	
5	**theoretical+practical**	**Production of Horticultural Seeds**	**POHS4**	
2	**theoretical**	**English Language 4**	**U04**	
5	**theoretical+practical**	**Landscape Architecture**	**LADE4**	

8. Expected learning outcomes of the program

Knowledge
A- A- Cognitive objectives
A/1: Enabling students to obtain knowledge and understanding of the intellectual and applied framework in agricultural sciences in general and horticultural sciences and garden engineerir particular.
A/2: Enabling students to obtain knowledge and understanding of agricultural requirements in accordance with international standards.
A/3 Introducing students to modern agricultural techniques through showing films, scientific research, and modern agricultural methods
A/4 - Communicate and discuss scientific concepts, experimental results, and analytical argu clearly and concisely, orally and in writing.
A/5 - Developing appropriate technology to solve farmers' problems and encouraging researcl aimed at progress in all disciplines for long-term technical development.
A/6 - Attracting and attracting qualified and talented scientific cadres to conduct scientific research in the college.
A/7 - Delivering knowledge and technology to peasants and farmers on a broader scale by training workers and officials of agricultural departments on modern developments in all fields through specialists.
Skills
B - The program's skill objectives
B1 - Use the display screen in classrooms to display illustrative pictures of various horticultural crops
B2 - Enable students to visit the library and the Internet and prepare and submit agricultural research reports
B3 - Conduct laboratory and field experiments, as well as perform statistical analyzes and interpret data results.
B4- Visiting horticultural stations in the geographical area and conducting practical experiments
Ethics
Providing students with the basics and topics related to knowledge and systems with previous learning outcomes for skills, to solve the practical problems described in A.

- Clarification and explanation of study subjects by the academic staff, theoretically and practically (laboratories and fields).
- Conducting scientific field visits for students to horticultural projects and facilities within the geographical area, accompanied by the teaching staff.
- Asking students during practical lessons to conduct some applied research under the supervision of their teachers.

9. Teaching and Learning Strategies

- Sending students for training in relevant state institutions.
- Training students with experiences that simulate reality. Daily exams with practical questions.
- Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems
- Applying the topics studied theoretically and at the practical level.
- Asking students during practical lessons to conduct some practical experiments under the supervision of their teachers.
- Visiting practical laboratories by academic staff.

10. Evaluation methods

- Daily and monthly tests with multiple-choice questions for academic subjects.
- Participation marks for competition questions for academic subjects.
- Grades for homework and report writing.
- Delivering scientific seminars

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor Dr.	Horticulture and landscape	Vegetable production	/	/	Staff	

Professor Dr.	Life sciences	Botany	/	/	**Staff**	
Professor	Horticulture and landscape	Fruit production	/	/	**Staff**	
Professor Dr.	Law	International law	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Plant nutrition	/	/	**Staff**	
Assistant Professor Dr.	Soil sciences	Survey and classification of soils	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Horticulture and landscape/vegetable production	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Plant tissue culture	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Phosphorus is a plant	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Medicinal and aromatic plants	/	/	**Staff**	
Assistant Professor Dr.	Horticulture and landscape	Horticulture and landscape/plant tissue culture	/	/	**Staff**	
Teacher	Horticulture and landscape	designing gardens	/	/	**Staff**	
Teacher	Horticulture and landscape	Green production	/	/	**Staff**	
Teacher	Horticulture and landscape	Faslja medicinal herbs	/	/	**Staff**	
Teacher	Horticulture and landscape	Decoration Plants	/	/	**Staff**	
Teacher	Horticulture and landscape	Green production	/	/	**Staff**	
Teacher	civil engineering	Surveying technology engineering	/	/	**Staff**	
Teacher	Vegetable production	Vital resistance	/	/	**Staff**	
assistant teacher	agricultural economy	agricultural economy	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/fruit production	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/ornaments	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/vegetable production	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/fruit production	/	/	**Staff**	

assistant teacher	Agricultural machinery and equipment	Agricultural machinery and equipment	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/vegetable production	/	/	**Staff**	
assistant teacher	Arabic Language	Arabic language/grammar	/	/	**Staff**	
assistant teacher	Horticulture and landscape	Horticulture and landscape/vegetable production	/	/	**Staff**	

Professional Development

Mentoring new faculty members

New faculty members complete the teaching suitability testing courses and the teaching methods course.

Involving new faculty members in many committees, training courses, and implementing joint research for the purpose of acquiring academic skills.

Professional development of faculty members

Special committees are available for continuous academic development for faculty members to keep pace with modern developments in the field of specialization. The committee has renewed the participation of faculty members to keep pace with recent developments in training courses, workshops, seminars, and joint research.

12. Acceptance Criterion

Approving the admission of students applying to study in the Department of Horticulture and Landscape Engineering through a central committee in the college depends on:

- **Standards of the Ministry of Higher Education and Scientific Research**
- **the average**
- **the desire**

13. **The most important sources of information about the program**
The most important specialized and private sources for each course in the field of horticulture and landscape (methodological books approved by the Ministry of Higher Education and Scientific Research). It meets the latest study requirements for horticulture and landscape architecture. It provides students with the necessary requirements for their success in the competitive job and practical market. It narrows the gap between academic skills and professional skills. Teaching students practical skills in establishing agricultural fields, public gardens, and private and home gardens.

14. Program Development Plan
- Providing students with additional basics related to the outcomes of thinking and analysis - Developing teaching curricula in coordination with the Committee of Deans of Colleges of Agriculture in Iraq. - Sending students for training in research institutions and centers. - Forming a national group to discuss various agricultural topics - Asking thinking questions during lectures, including (what, how, when, and why) - Preparing students with homework assignments that require self-explanation in causal ways

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023/1	U01	Computer Applications 1	optional	√	√	√	√	√	√	√	√	√	√	√	√
	UO1	Democracy and Human Rights	optional	√	√	√	√	√	√	√	√	√	√	√	√
	POSC1	principle of Soil Science	optional	√	√	√	√	√	√	√	√	√	√	√	√
	FCPR1	Principle of Field Crops	optional	√	√	√	√	√	√	√	√	√	√	√	√
	UO1	1 English Language	optional	√	√	√	√	√	√	√	√	√	√	√	√
	ORCH1	Organic chemistry	optional	√	√	√	√	√	√	√	√	√	√	√	√
	MATH1	Mathematics	optional	√	√	√	√	√	√	√	√	√	√	√	√
	SURV1	Surveying Principles	optional	√	√	√	√	√	√	√	√	√	√	√	√
	UO1	Computer Applications 2	optional	√	√	√	√	√	√	√	√	√	√	√	√
	POAP1	Principle of Animal Production	optional	√	√	√	√	√	√	√	√	√	√	√	√
	ENDR1	Engineering Drawing	optional	√	√	√	√	√	√	√	√	√	√	√	√
	AMEQ1	Agricultural Machinery and Equipment	optional	√	√	√	√	√	√	√	√	√	√	√	√
	BOTA1	Botany	Basic	√	√	√	√	√	√	√	√	√	√	√	√

	POFI1	**Principle of Food Processing**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	STAT1	**Statistics**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	POAE1	**Principle of Agricultural Economics**	optional	√	√	√	√	√	√	√	√	√	√	√	√
2023/2	**U02**	**Computer Applications 3**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	U02	**2 English Language**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	PLNU2	**Plant Nutrition**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	POLG2	**Principle of Landscape Design**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	PLAN2	**Plant Anatomy**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	GETE304	**Plant Genetics**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	PLPH2	**Plant Physiology**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	HOPE2	**Horticultural Pests Insects**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	AGEX2	**Agricultural Extension**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	UO2	**Computer Applications 4**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	PLEC2	**Plant Ecology**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	BICH2	**Biochemistry**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	ORFA2	**Organic Farming**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	MICR2	**Microbiology**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	NUPR2	**Nurseries and Propagation**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	AGWC2	**Agricultural Weed Control**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	UOP213	**Arabic Language**	optional	√	√	√	√	√	√	√	√	√	√	√	√
	BAAC102	**Baath Party crimes**	optional	√	√	√	√	√	√	√	√	√	√	√	√
2023/3	**STED3**	**Design and Analysis of Experiments**	Basic	√	√	√	√	√	√	√	√	√	√	√	√

	IRDR3	**Irrigation and Drainage**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	BICO3	**Horticultural Plant Pathology**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	DFPR3	**Basics of Deciduous Fruit 1**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	ORPL3	**Ornamental Plants 1**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	MAPL3	**Medicinal and Aromatic Plants**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	POWV3	**Winter Vegetables**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	POSV3	**Summer Vegetables**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	ORPL3	**Ornamental Plant 2**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	DFPR3	**Basics of Deciduous Fruit 2**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	BOHP3	**Breeding of Horticultural Plants**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	PGRE3	**Plant Growth Regulators**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	APTE309	**Beekeeping**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	U03	**English Language 3**	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2023/4	**SEMI4**	**Seminar**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	GRPR4	**Graduation Research Project 1**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	PTCU4	**Plant Tissue Culture**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	PRCU4	**Protected Cultivation**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	RSHC410	**Post-harvest Physiology of Fruit**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

	EVFR4	**Evergreen Fruit**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	FAMA4	**Farm Management**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	GRPR402	**Graduation Research Project 2**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	PGSF404	**Production of Grapes**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	PAPR406	**Palm Production**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	BIOT408	**Plant Biotechnology**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	SFFE4	**Fertility and Fertilizer**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	POHS4	**Production of Horticultural Seeds**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	U04	**English Language 4**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	LADE4	**Landscape Architecture**	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

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

The curriculum of the Department of Horticulture and Landscape Architecture for the academic year 2023-2024

The first stage									
Second semester: number of hours					First semester: number of hours				
number	Practical	Theoretical	Subject Name	T	number	Practical	Theoretical	Subject Name	T

The second phase									
Second semester: number of hours					First semester: number of hours				
number of units	Practical	Theoretical	Subject Name	T	number of units	Practical	Theoretical	Subject Name	T
3.5	3	2	Plant Ecology	1	3.5	3	2	Plant nutrition	1
3.5	3	2	Biochemistry	2	3.5	3	2	Principle of Landscape Design	2
3.5	3	2	Organic Agriculture	3	3.5	3	2	Plant anatomy	3
3.5	3	2	Principles of microbiology	4	3.5	3	2	Plant genetics	4
3.5	3	2	Weeds and ways to combat them	5	3.5	3	2	Plant physiology	5
3.5	3	2	Nurseries and propagation of horticultural plants	6	2.5	3	1	Horticultural Pests Insects	6
2	------	2	Arabic Language	7	2		2	English language 2	7
2	3	-------	Computer applications4	8	2	-------	2	Agricultural Extension	8
1	-------	1	Freedom and democracy	9	2	3	-------	Computer applications3	9
1	------	1	Baath Party crimes	10	26	21	15	the total	
27	20	16	the total						

third level									
Second semester: number of hours					First semester: number of hours				
number of units	Practical	Theoretical	Subject Name	T	number of units	Practical	Theoretical	Subject Name	T
3.5	3	1	Ornamental plants2	1	3.5	3	2	Irrigation and Drainage	1
3.5	3	2	Plant growth regulators	2	3.5	3	1	Ornamental plants 1	2
3.5	3	2	Beekeeping	3	3.5	3	2	Design and analysis of agricultural experiments	3
3.5	3	2	Summer vegetables	4	3.5	3	2	Horticultural Plant Pathology	4
3.5	3	2	Deciduous fruit basics2	5	3.5	3	2	Basics of Deciduous Fruit 1	5
3.5	3	2	Breeding horticultural plants	6	3.5	3	2	Medicinal and aromatic plants	6
2	--------	2	Language: English 3	7	3.5	3	2	Winter vegetables	7
23	18	13	the total		24.5	21	13	the total	

The fourth stage									
Second semester: number of hours					First semester: number of hours				
number of units	Practical	Theoretical	Subject Name	T	number of units	Practical	Theoretical	Subject Name	T
3.5	3	2	Production of Grapes	1	3.5	3	2	Plant tissue culture	1
3.5	3	2	Palm Production	2	3.5	3	2	Evergreen Fruit	2
3.5	3	2	Plant Biotechnology	3	3.5	3	2	Protected Cultivation	3
3.5	3	2	Fertility and Fertilizer	4	3.5	3	2	Post-harvest Physiology of Fruit	4
3.5	3	2	Production of Horticultural Seeds	5	2.5	3	1	Farm Management	5

2.5	**3**	**1**	Landscape Architecture	**6**	**1.5**	**3**	**------**	**Graduation research project 1**	**6**
2	**-------**	**2**	English Language 4	**7**	**1**	**-------**	**1**	**Seminar**	**7**
1.5	**3**	**------**	**Graduation research project 2**	**8**	**---------**	**-------**	**---------**	**----------**	**--**
23.5	**21**	**13**	**the total**		**19**	**18**	**10**	**the total**	

Phase I decisions

1. **Course Name**
Computer Applications 1
2. **Course Code**
UO1
3. **Semester / year**
Second semester 2023
4. **date Preparation this the description**
20/9/2023
5. **shapes the audience Available**
My presence
6.**number hours Academic (total) number Units (total (**
45 **hours**; 2 **Units**
7. **name responsible The decision Academic (if more from name Mention) and email**
M. M. Ali Hussein Ali Ali.husseinali@uokerbla.edu.iq
8. **Goals The decision**

- **Introducing the student to**Microsoft programs - **Introducing the student to the**Word program **Introducing the student to methods of typesetting, printing, and output using**Word Microsoft	**Goals Subject Scholarship**

9. **Strategies education And learning**	
.**Giving lectures –** **Using the method of dialogue and discussion with students to convey theoretical information –** **.to the student** **. Applying theoretical lessons in the workshop –** **.Using computers and display devices during lectures –** **Assigning students to prepare reports on each of the cognitive goals they want to achieve**	**The strategy**

10. Course structure

Evaluation method	Teaching method	Name of the unit/course or subject	Required learning outcomes	hours	the week
Exams	Practical + theoretical	definition of computer	Bachelor's	hours 5	the first
Exams	Practical + theoretical	Microsoft software	Bachelor's	hours 5	the second
Exams	Practical + theoretical	Word and how to useit	Bachelor's	hours 5	the third
Exams	Practical + theoretical	Create a Word document and adjust its writing basics	Bachelor's	hours 5	the fourth
Exams	Practical + theoretical	A toolbar in a Word document	Bachelor's	hours 5	Fifth
Exams	Practical + theoretical	Insert icon	Bachelor's	hours 5	VI
Exams	Practical + theoretical	Page layout icon	Bachelor's	hours 5	Seventh
Exams	Practical + theoretical	References and verbiage icon u	Bachelor's	hours 5	VIII
Exams	Practical + theoretical	Page views icon	Bachelor's	hours 5	Ninth
Exams	Practical + theoretical	icon (file(	Bachelor's	hours 5	The tenth
Exams	Practical + theoretical	Conservation operations and their types	Bachelor's	hours 5	eleventh
Exams	Practical + theoretical	Print commandsprint	Bachelor's	hours 5	twelveth
Exams	Practical + theoretical	External exercises	Bachelor's	hours 5	Thirteenth
Exams	Practical + theoretical	Correct and change words	Bachelor's	hours 5	fourteenth
Exams	Practical + theoretical	shortcuts Keyboard	Bachelor's	hours 5	Fifteenth

11. **evaluation The decision .**	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams .(30%(Practical final exam (20%) - Theoretical final exam - (%5)	
12. **Sources Learning And teaching .**	
Methodological books prescribed for each course	**Books decided required (Methodology that (Found**
Supporting sources for each course	**the reviewer The main one (Sources (**
Scientific journals in computer science disciplines	**Books And references Prevailing that ,recommend With it (Magazines scientific (.... Reports**
Specialized websites	**Electronic references, websites**

1. Course Name
Democracy and human rights
2. Course Code
U211
3. Semester/year
First semester / 2023-2023
4. Date this description was prepared
20/9/2024
5. Available attendance forms
My presence
6. Number of study hours (total) Number of units (total(
hours per week, one unit 2
7.Name of the course administrator (if more than one name is mentioned(
: Name: Prof. Dr Khudair Yassin Al-Ghanimi Emailkudir. **yassen@uokerbala.edu.iq**

Course objectives	
Creating a generation of students capable of understanding and properly applying this vocabulary **Students gain experience, skills, and the ability to deal with and analyze data** **Creating an information base capable of dealing in accordance with the data and .principles of rights and the foundations of the democratic system** **Developing a huge amount of information and a student base that conveys knowledge .capable of making decisions and communicating effectively with society**	**Objectives of the study subject**
Teaching and learning strategies .9	
:Active learning strategies **By providing examples for each word of the approved curriculum and leaving room for students to think critically, creative thinking, research and exploration in the .academic and societal environment and compare them to the current reality** **Using examples and studies of real-life cases of democratic systems, their foundations, the existing system of rights and freedoms, and the International Charter, and .comparing them to illustrate the historical development of the subject's vocabulary** **Brainstorming strategies and focus on putting the learner's mind in a state of readiness and anticipation. To generate the largest number of spontaneous ideas about the word subject of the lesson, identify the problem, and violate reality in order .to solve it, after sifting through these ideas and selecting the best among them** **Electronic learning resources: Providing electronic learning resources, such as videos and reports issued by United Nations human rights organizations and Democracy International** **Group discussions by giving and encouraging students to discuss the concepts .presented for each of the subject terms and return them together** **:Continuous evaluation** **Assignments and tests: Assess students' understanding of concepts and content of the .material through assignments and tests** **Focusing on the relationship between human rights and a stable democratic system .as an existing, interconnected dialectic that exists together**	**The strategy**

10 .Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Daily paper exam	Lectures	Introduction and definition	Understanding the basic principles,	2	1

			introduction/definition of concepts		
Direct oral questions for each student	Lectures	Principles of human rights and democracy	A general historical overview - getting to know the most important basic principles in human rights vocabulary / and why human rights and democracy	2	2
======	====	The relationship between democracy and human rights. Objectives of the two components	Providing students with the scientific ability to understand the subject	2	3
====	=====	The relationship between human rights and some modern elements of the phenomenon of information progress - The phenomenon of 1 globalization and human rights	Defining the nature of rights and the importance of studying human rights	2	4
=====	===== A	The interests of -learning and 3-Reinforcement and the -idea of human rights/4 The phenomenon of corruption and its impact on human rights	Students' knowledge of these vocabulary	2	5
Daily paper exam	====	International Bill of Human Rights The Universal -1 Declaration of Human Rights	Students' understanding of principles in international laws governing human rights and democracy	2	6
		Monthly exam	Monthly exam	2	7
======	=====	Declarations and other international conventions The International -1 Covenants on Economic, Social and Cultural Rights Elements of human rights under international conventions and declarations 1- Civil rights-2-3	Students' understanding of principles in international laws governing human rights and democracy	2	8
Oral questions to be answered by students by	====	Part Two: Democracy/its definition and types	General historical overview, introduction and definition	2	9

specifying their name		**Democracy in the ancient era / direct democracy ,types of democracies Semi-direct democracy, representative democracy, consensual and social democracy**			
Oral questions to be answered by students by specifying their name	**======**	**The means of transferring power democratically are general election and restricted election Democratic government\the difference between government and state\means of transfer of power**	**Providing students with the scientific ability to understand the subject individually, step by step**	**2**	**10**
=======	**=====**	**Election and voting systems/ direct election and indirect election/individual voting and list voting system**	**========**	**2**	**11**
======	**=====**	**democratic systems / political parties: their definition, types, and relationship with political parties. Human rights and democratic principles**	**======**	**2**	**12**
======	**=====**	**Advantages and disadvantages of democratic systems Means of influencing - the democratic system Pressure group Corruption-2**		**2**	**13**
===	**====**	**General Review**	**General Review**	**2**	**14**
	====	**Monthly exam**		**2**	**15**

11.Course evaluation .	
Theoretical semester exams (40%) - oral and paper tests and questions Daily (10%) The theoretical final .(50%(exam	
.12. Learning and teaching resources	
Introduction book to the study of democracy and public freedoms / Prof. Dr. Khudair Yassin, Baghdad, Al-Masala Printing: 2022	Required textbooks (methodology , if any(
French Constitution - The above Declaration of Human Rights - Publisher, French Department of Communication and Information, French Ministry of ,Foreign Affairs, p. 6*Sciences* . CRC press.	Main references (sources (

United Nations Charter 1945
2- Universal Declaration of Human Rights 1948
3- The International Covenant on Human Rights 1966
4- European Charter on Human Rights 1953
5- Charter of the International Criminal Court - Rome 1998
7- Human Rights and Elections Handbook issued by the Center for Human Rights - United Nations, 1994, New York. Geneva 1994-15.
-8 -9Human Rights, article publishedlin - Http;//www.iep.utm/h hamns.htm
-9 Alfred Sauvy, Lopinion Publish Universitaires de France, France, 1958 p99
-10 Aristote -La Poltique -Editions Gonthier . Paris, 1964, p. 178
	Mainstream recommended books and references (....Reports , scientific journals)

-talebawad@muwatin.org A	Electronic references , websites

1. Course Name
principle of Soil Science
2. Course Code
POSC1
3. Semester / One
2024-2023
4. Date this description was prepared
20/9/2023
5. forms of attendance .5
I am present in the hall+ Electronic + group work with students on Telegram University system
6. Number of study hours (total): number of units (total
75 hours, 3.5 units
7. Name of the course administrator (if more than one name is mentioned(
: Name : Sabbar Rahi Jassim Email Sabbar.aljeboory@uokerbala.edu.iq Nour Ahmed Nouri . : EmailNoor.ahmed@uokerbala.edu.iq
8. Course objectives

Providing the student with information about the subject of soil principles so that he is able to manage the soil and improve its properties to be .suitable for plant growth and thus achieve the best agricultural production	Objectives of the study subject

.9. Teaching and learning strategies	
Audio methods (teaching explanation of the topic(Writing style on the blackboard Direct dialogue method between the teacher and the student, with student evaluation in class contributions Finding solutions to the problems and obstacles that students encounter in the practical and theoretical parts	The strategy

10.Course structure .

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
• the audience • Oral exams • Written tests • Duties • Daily sharing • Research papers	• Diction • Discussions • the offer • Student groups • Preparing and discussing scientific research	General definitions and concepts	Knowledge and understanding Skill Value	5	1
		Soil composition and its basic components		5	2
		Origin and development of soils		5	3
		Physical properties of soil		5	4
		Soil composition		5	5
		Soil water		5	6
		Soil water classification		5	7
		Colloids and soil chemical properties		5	8
		Mineral colloids		5	9
		Study some chemical and fertility properties of soil		5	10
		Biological properties of soil		5	11

		Organic matter in the soil		**5**	12
		The plant obtains nutrients		**5**	13
		Nutrients and their importance to plants		**5**	14

11.Course evaluation .	
according to the tasks assigned to the student, such as daily preparation, 100 Distribution of the grade out of .daily, oral, monthly, written exams, reports , etc	
12.Learning and teaching resources .	
Principles of soil science	**Required textbooks (methodology , if any(**
soil science/ A.M.D. Abdullah Najm Al-Ani	**Main references (sources (**
Soil fertility and fertilizers, Prof. Dr. Nour El-Din Shawqi (2014(Ali and others Soil survey and classification, Prof. Dr. Ahmed Saleh (1994(Muhaimid Al-Mashhadani	**Mainstream recommended books and references (.... Reports scientific journals)**
	Electronic references , websites

1.	Course Name
	Principles of field crops
2.	Course Code
	FCPR1
3.	Semester / year.
	semester 2023 – 2024
4.	The date this description was prepared
	2024/23/4
5.	Available attendance forms
	My presence
6.	- : Number of study hours (total) Number of units (total (
	75 hours and 3.5 units
	Name of the course administrator (If more appropriate, please mention) and email
	Name: - M. Ivan is back as a slave - ; And email evan.abd@uokerbala.edu.iq

8.Course objectives

Preparing and qualifying specialized engineers in the field of field crop cultivation Through the use of many education methods , training students to apply modern agricultural programs, and granting students a bachelor's degree in the theoretical and practical aspects, in a way that serves the .preparation of a graduate of a distinguished level in the practical arena	Objectives of the study subject

.9. Teaching and learning strategies

Providing students with additional basics related to the outcomes of thinking and analysis **.Forming a discussion group to discuss various agricultural topics for field crops** **Asking intellectual questions during lectures that include (what , how, when, why, and (whether** **Preparing students for homework that requires self-explanation of some questions that require answers** **.Causality** **.Daily exams with discussion questions within the lecture** **The degree of participation in questions related to the academic subject (principles of .(field crops** **.Specific grades for field duties and reports on some plants grown as field crops**	The strategy

10 .Course structure

Evaluation method	Learning method	Unit name and topic	Required learning outcomes	hours	the week
Exams	**Practical + theoretical lectures**	**Field crops , their definition, origin**	**The student should know the most important field crops and their origin**	**5 hours**	1

Exams	**Practical + theoretical lectures**	**Division of field crops according to economic use and agricultural season**	**The student should know the types of field crops and their uses**	**5 hours**	2
Exams	**Practical + theoretical lectures**	**Botanical description of the most important families such as Poaceae , Legumes , and others**	**The student should know the botanical description of field crops**	**5 hours**	3
Exams	**Practical + theoretical lectures**	**Environmental factors and their relationship to field crop growth**	**The student gets to know the environmental factors that affect the growth of field crops**	**5 hours**	4
Exams	**Practical + theoretical lectures**	**First month test**	**Monthly test**	**5 hours**	5
Exams	**Practical + theoretical lectures**	**Land preparation operations for agriculture**	**For the student to become familiar with the agricultural processes of the land that will be planted with field crops**	**5 hours**	6
Exams	**Practical + theoretical lectures**	**Seeds, grains, germination and purity testing, and conditions that must be provided for field .crop seeds**	**The student gets to know the types of seeds and which ones are suitable for plants and growth**	**5 hours**	7
Exams	**Practical + theoretical lectures**	**The importance of grading grains , drying the crop , storing it and marketing it**	**Identify the sizes and types of grains and how to store and market them**	**5 hours**	8
Exams	**Practical + theoretical lectures**	**The bush , its definition, factors of its spread, the losses it causes, and ways to combat it**	**Identify the types of bushes that help field crops grow**	**5 hours**	9
Exams	**Practical + theoretical lectures**	**Second month test**	**Monthly test**	**5 hours**	10
Exams	**Practical + theoretical lectures**	**Agricultural cycles , points to be taken into account in dividing agricultural cycles, types of agricultural cycles and their benefits with examples**	**The student learns about agricultural courses and what their benefits are**	**5 hours**	11

Exams	**Practical + theoretical lectures**	**A brief introduction to field crop breeding methods**	**The student gets to know some methods of raising field crops**	**5 hours**	12
Exams	**Practical + theoretical lectures**	**Stages of production and multiplication of improved seeds**	**Identify the stages of production and multiplication of improved seeds**	**5 hours**	13
Exams	**Practical + theoretical lectures**	**A brief idea about the most important annual crops in Iraq in the form of concentrated tables**	**Identify the most important annual crops in Iraq**	**5 hours**	14
Exams	**Practical + theoretical lectures**	**General Review**	**Knowing the extent of the student's comprehension and understanding of the curriculum**	**5 hours**	15

11. Course evaluation	
semester exams (30%), practical semester exams (15%), daily practical exams (5%), practical final exam (20%), (30%(theoretical final exam	
.12.Learning and teaching resources	
The prescribed methodological book is Principles of Field Crops Dr.. Majeed Mohsen Al-Ansari and Dr. Ghanem Saadallah Hasawi , Dr. Abdel Hamid Ahmed Al-Younis and Dr. Wafqi Shaker Al-Shamaa.	**Required textbooks (methodology , if (any**
The sources supporting the course are the lectures of Dr. Fayez Fayyad Muhammad. faculty of Agriculture . University of Baghdad, 2017 - 2016	**Main references (sources (**
Scientific journals in agricultural specialties	**Mainstream recommended books and Reports references (scientific journals (....**
	Electronic references , websites

1. Course Name
organic chemistry
2. Course Code
ORFA2
3. Semester / year
2024 - 2023
4. date Preparation this the description
20/9/2023
5. shapes the audience Available
My presence
6. number hours Scholarship
)75 hours (number Units (3.5 (
7. AME-: responsible The decision Academic (if more from name Mentionsed (
: the name : M.M Ali Abdul Rahim Kazem Emailali.abid@uokerbala.edu.iq
8. Goals The decision

The student learns about the most important branches of chemistry, which is the branch of organic chemistry, as well as knowing the main classification of its .organic compounds and studying them **The student will know how to name different organic compounds** **The student gets to know the most important physical and chemical properties and methods for preparing organic compounds** **The student gets to know the saturated organic compounds , their physical and chemical properties , and methods of preparing them** **The student will be familiar with the unsaturated organic compounds, their .physical and chemical properties, and methods of preparing them** **The student gets to know aromatic organic compounds Its physical and chemical properties and methods of preparation** **The student will be familiar with the most important paths of chemical reactions for organic compounds, such as substitution and deletion**	**Goals Subject Scholarship**

.9. Strategies education And learning	
	The strategy

.10.structure The decision

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Oral evaluation and editing during the lecture through questions and answers	My presence B Using the method of discussion and cooperative learning	organic chemistry	Identify and classify organic chemistry and the most important bonds between molecules	5	1
Oral evaluation and editing during the lecture through questions and answers	My presence Using the method of discussion and cooperative learning	organic chemistry	Classification and naming of organic compounds	5	2

Oral evaluation and editing during the lecture through questions and answers	My presence	organic chemistry	Linear and cyclic alkanes and their substituted groups	5	3
Oral evaluation and editing during the lecture through questions and answers	Using the method of discussion and cooperative learning	organic chemistry	Unsaturated organic compounds: linear and cyclic alkenes	5	4
Oral evaluation and editing during the lecture through questions and answers	-	organic chemistry	First month exam	5	5
Oral evaluation and editing during the lecture through questions and answers	Using the method of discussion and cooperative learning	organic chemistry	Unsaturated organic compounds alkynes	5	6
Oral evaluation and editing during the lecture through questions and answers	My presence B Using the discussion method	organic chemistry	Aromatic hydrocarbons	5	7
Oral evaluation and editing during the lecture through questions and answers	Using the method of discussion and cooperative learning	organic chemistry	Reaction pathways/substitution reactions and deletion reactions	5	8
Oral evaluation and editing during the lecture through questions and answers	My presence B Using the discussion method		Halides	5	9
Oral evaluation and editing during the lecture through questions and answers	Using the method of discussion and cooperative learning		Alcohols	5	10
Oral evaluation and editing during the lecture through questions and answers	My presence B Using the discussion method		Ethers	5	11
Oral evaluation and editing during the lecture through questions and answers	Using the method of discussion and cooperative learning		Aldehydes And ketones	5	12
Oral evaluation and editing during the lecture through questions and answers	My presence		Carboxylic acids	5	13

Oral evaluation and editing during the lecture through questions and answers	**Using the method of discussion and cooperative learning**		**A esters And amides**	**5**	**14**
Oral evaluation and editing during the lecture through questions and answers	**-**		**Monthly exam**	**5**	**15**

.11. evaluation The decision	
on according to mission Assigned With it requester like 100 distribution Class from Preparation Daily And exams Daily And oral Monthly, editorial, reports , etc	
.12. Sources Learning And teaching	
Foundations of organic chemistry Dr. Youssef Ali Al-Fattahi	**Books decided required (Methodology (that Found**
Solomons ' Organic Chemistry Global Edition 2017	**the reviewer The main one (Sources (**
Journal ACS Organic and Inorganic Au Organic Chemistry In Its Applications To Agriculture And Physiology, Ed. By L. Playfair	**Books And references Prevailing that recommend With it (Magazines (.... Reports , scientific**
Google scholar, Research get, ACS	**Electronic references , websites**

1. Course Name	
Mathematics	
2. Course Code	
MATH1	
3. Semester / year	
First 2023	
4. date Preparation this the description	
20/9/2023	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total (	
30 hours; 1 unite	
7. name responsible The decision Academic (if more from name Mention) and email	
Anwar ZiaE-mail: drjkali @hot mail. com	
8. Goals The decision	
Goals Subject Scholarship	
9 .Strategies education And learning	
.Lecture, use of the blackboard, and presentation - .Demonstrations using diagrams and pictures - .Interactive discussion - .self education - .Organizing lectures prepared by students -	The strategy

.10.structure The decision

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Exams	Theoretical + practical		Types of arrays	2	1
Exams	Theoretical + practical		Functions and their diagrams	2	2
Exams	Theoretical + practical		Objectives and their basic theories	2	3
Exams	Theoretical + practical		First month exam	2	4
Exams	Theoretical + practical		Continuity	2	5
Exams	Theoretical + practical		differentiation	2	6
Exams	Theoretical + practical		Molecular derivation	2	7
Exams	Theoretical + practical		Second month exam	2	8
Exams	Theoretical + practical		integration	2	9
Exams	Theoretical + practical		Types of arrays	2	10
Exams	Theoretical + practical		Functions and their diagrams	2	11
Exams	Theoretical + practical		Continuity	2	12
Exams	Theoretical + practical		differentiation	2	13
Exams	Theoretical + practical		Types of arrays	2	14
Exams	Theoretical + practical		integration	2	15

Exams	**Theoretical + practical**		Molecular derivation	**2**	

. 11.evaluation The decision.					
final exam	The project	Daily exams	Laboratory		Semester
%40		**% 0 1**	**%15**		**%35**

. 12. Sources Learning And teaching	
The methodological textbook	**Books decided Required ((methodology that Found**
	the reviewer Home (Sources (
Books, supporting references, and articles in the field of mathematics	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
Specialized websites	**Electronic references, websites**

1.Course Name
Surveying Principles
2. Course Code
SURV1
3. Semester / year
First semester 2023
4. date Preparation this the description
20/9/2023
5. shapes the audience Available
My presence
6. number hours Academic (total) number Units (total (
75 hours ; 2.5 unite
7. name responsible The decision Academic (if more from name Mentionsed) And email
M. M. Ali Hussein Ali Ali.husseinali@uokerbla.edu.iq
8.Goals The decision

Granting the student a bachelor's degree in the theoretical and practical aspects in order to prepare a graduate of a distinguished level and a position in the . practical arena .Enabling students to distinguish between land surveying and other areas A2- Enabling students to distinguish between the different tools used in measurement A3- Enabling students to recognize the devices used in ground and surface .measurements	**Goals Subject Scholarship**
.9 . Strategies education And learning	
.Giving lectures Using the method of dialogue and discussion with students to convey theoretical - .information to the student .Applying theoretical lessons in the field - .Use modern devices - .Using computers and display devices during lectures - .Assigning students to prepare reports on each of the cognitive goals they want to achieve	**The strategy**

10.Course structure

Evaluation method	Teaching method	Name of the unit/course or subject	Required learning outcomes	hours	the week
Exams	Practical + theoretical	A general introduction to surveying/types of surveying	Bachelor's	5	1
Exams	Practical + theoretical	Simple cadastral measurements/facts about cadastral meteorology	Bachelor's	5	2
Exams	Practical + theoretical	and Measuring lengths and distances/ direct of measurement indirect methods	Bachelor's	5	3
Exams	Practical + theoretical	Simple tools and advanced tools	Bachelor's	5	4
Exams	Practical + theoretical	Obstacles and obstacles in measuring lengths	Bachelor's	5	5
Exams	Practical + theoretical	Learn how to read distances on maps/scales	Bachelor's	5	6
Exams	Practical + theoretical	The latest method for measuring lengths/engineering budgets	Bachelor's	5	7
Exams	Practical + theoretical	Budget parts	Bachelor's	5	8

Exams	Practical + theoretical	Differential budget	Bachelor's	5	9
Exams	Practical + theoretical	Tools and devices used in the budget	Bachelor's	5	10
Exams	Practical + theoretical	External and internal installation of the scale	Bachelor's	5	11
Exams	Practical + theoretical	) Leveling devicelivel (	Bachelor's	5	12
Exams	Practical + theoretical	Erecting and dropping columns	Bachelor's	5	13
Exams	Practical + theoretical	Measure the rise and fall above sea level	Bachelor's	5	14
Exams	Practical + theoretical	Using a modern measurement system	Bachelor's	5	15

11.Course evaluation	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams .(30%(Practical final exam (20%) - Theoretical final exam - (%5)	
.12. Sources Learning And teaching	
Prescribed methodological books For each course Flat space and its applications in agriculture/Dr. Ramadan Al-Anazi	Books decided required (Methodology (that Found
Supporting sources for each course	the reviewer The main one (Sources (
Scientific journals in basic and veterinary specialties	Books And references Prevailing that recommend With it (Magazines (... Reports ,scientific
Specialized websites	Electronic references, websites

1. Course Name	
Botany	
2. Course number	
BOTA1	
3. Semester / Year	
Phase 1 / Chapter 2	
4. Date this description was prepared	
10/2/2024	
5. Available Attendance Forms	
In-Person	
6. Number of study hours (total) Number of units (total)	
75	
Name of course administrator (if more than one name is mentioned) and email	
Prof. Dr./ Suzan Mohammed Al Mahdi **Suzan.mohammed@uokerbala.edu.iq**	
Course Objectives	
Objectives of the course	13. Course Objectives The course aims to introduce the student to botany and its various branches and to the basic principles of botany in terms of its phenotype and internal structure and the most important environmental factors affecting this. The student also understands the basics of plant classification and the classification status of the kingdoms of living organisms and gives the student the necessary skill to distinguish between plants and other living organisms
9. Teaching and Learning Strategies	
OF THE STRATEGY	**How to give lectures** **- Using the method of dialogue and discussion with students to communicate theoretical information to the student .** **- Applying theoretical lessons in the field.** **- Use of modern laboratories.** **- Using computers and presentation during lectures .** **- Assigning homework to students to prepare scientific reports on the specialization.**
10. Course Structure	

Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
1	5	Knowledge	A brief history of botany, its study and its importance to plants and humans	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
2	5	Knowledge	Departments of Botany , Plant Characteristics, Plant Types	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
3	5	Knowledge	Gymnosperms,covered with seeds	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
4	5	Knowledge	Monocotyledon plants and cotyledons	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
5	5	Knowledge	Organic chemical compounds in plants and their types	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
6	5	Knowledge	Inorganic chemical compounds in plants and their types	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
7	5	Knowledge	Factors influencing plant growth (water,light,temperature,nutrients, plant growth regulators)	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity

					and Reports
8	5	Knowledge	Plant groups (bacteria,lichens,fungi,algae)	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
9	5	Knowledge	Plant cell	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
10	5	Knowledge	Plant tissues, their types and features	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
11	5	Knowledge	The root has its functions and types.	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
12	5	Knowledge	Leg Types and Functions	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
13	5	Knowledge	Papers, their composition, parts, transformations and forms	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports
14	5	Knowledge	Flowers and flower parts Floral inflorescences Floral symmetry	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity

					and Reports
15	5	Knowledge	Fruit ,Seed,Inheritance and Development in Plant	Lecture, discussion ,reports, science film labs	Quick and Monthly Exams, Class Activity and Reports

11. Course Evaluation	
. Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Al-Sahar ,Qasim Fouad (1997) Plant Division 0 Second Edition - Academic Library, General Plant Shawqi et al. 1979**
Key References (Sources)	**combatantAhmed Mohamed(1996) General Plant - Anglo-Egyptian Library - Cairo ,Egypt**

1. Course Name
Principle of Agricultural Economics
2. Course number
POAE1
3. Semester / Yea
Second semester 2022/2023
4. Date this description was prepared
*** 2/2/2024**
5. Available Attendance Forms
In-Person
6. Number of study hours (total) Number of units (total)
3795
Name of course administrator (if more than one name is mentioned) and email
Eng. Alawi Abdul Redha https://classroom.google.com/u/1/c/NzI2NzQwODM5ODRa elawi.abdalridha@uokerbala.edu.iq

Course Objectives	
Objectives of the course	**A/1 : Enabling students to obtain knowledge and understanding of the intellectual and applied framework in agricultural economics.** **A/2 : Enabling students to obtain knowledge and understanding according to scientific and economic standards** **A/3 Familiarizing students with modern technologies in agriculture through the presentation of films and modern scientific and economic research** nabling students to learn about modern and advanced methods using modern logies in the resource wallet

9 Teaching and Learning Strategies |	
OF THE STRATEGY	- Providing students with additional basics related to the outputs of thinking and analysis - Forming a fluffy group to discuss various agricultural topics - Asking reflective questions during lectures, such as(what, how, when and why) Preparing students for homework that requires self-explanations in modern causal ways

10. Course Structure

Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
The first	5-hour	Bachelor	General Concepts – Aspects of Economic Life - Economic Problem	Prac THEO.	PAPERS
Second	5-hour	Bachelor	Introduction to Micro-Macro-Economic Theory	Prac THEO.	PAPERS

third	**5-hour**	**Bachelor**	**Theory of Consumer Behavior - Theory of Utility and Consumer Equilib**	**Prac THEO.**	**PAPERS**
Fourth	**5-hour**	**Bachelor**	**Modern Theory of Consumer Equilibrium (Indifference Curves)**	**Prac THEO.**	**PAPERS**
Five	**5-hour**	**Bachelor**	**General Economics/Agricultural Economics and its Importance**	**Prac THEO.**	**PAPERS**
Six	**5-hour**	**Bachelor**	**Types of Agriculture - Agricultural Systems**	**Prac THEO.**	**PAPERS**
Seven	**5-hour**	**Bachelor**	**The importance and role of the agricultural sector in economic development**	**Prac THEO.**	**PAPERS**
The eighth	**5-hour**	**Bachelor**	**Economic Resources – Agricultural Costs**	**Prac THEO.**	**PAPERS**
Nine	**5-hour**	**Bachelor**	**Production - production functions - stages of natural production – Chaoui Output Curves**	**Prac THEO.**	**PAPERS**
Ten	**5-hour**	**Bachelor**	**Law of Diminishing Yields and Productive Flexibilities**	**Prac THEO.**	**PAPERS**
Eleven	**5-hour**	**Bachelor**	**Demand theory, factors affecting demand and types of elasticities**	**Prac THEO.**	**PAPERS**
Twelve	**5-hour**	**Bachelor**	**Supply theory and factors influencing supply**	**Prac THEO.**	**PAPERS**
Thirteenth	**5-hour**	**Bachelor**	**Agricultural Prices, Agricultural Marketing, Agricultural Finance and Credit**	**Prac THEO.**	**PAPERS**
Fourteenth	**5-hour**	**Bachelor**	**Farm Business Management and Agricultural Cooperation**	**Prac THEO.**	**PAPERS**
Fifteenth	**5-hour**	**Bachelor**	**General Revision**	**Prac THEO.**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	Textbooks for each course
Key References (Sources)	Resources for each course
Prevailing books and references that are recommended (scientific journals , reports....)	Scientific journals in basic and veterinary specialties
Electronic references, websites	Specialized websites

1. Course Name	
Engineering Drawing	
2. Course number	
ENDR1	
3. Semester / Yea	
Chapter Two	
4. Date this description was prepared	
15/ 1/2023	
5. Available Attendance Forms	
In-Person	
6. Number of study hours (total) Number of units (total)	
45	
Name of course administrator (if more than one name is mentioned) and email	
Eng. M. Ali Hussein Ali Ali.husseinali@uokerbla.edu.iq	
Course Objectives	
Objectives of the course	Granting the student a bachelor's degree in the practical aspect in order to serve the preparation of a graduate with a prestigious level and visceral to the practical arena
9. Teaching and Learning Strategies	
OF THE STRATEGY	1-Enabling students to distinguish between engineering drawing and artistic drawing. 2- Enabling students to distinguish between types of engineering drawings. 3- Introducing the student to the types of fonts .

1. Course Structure

Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
The first	3 hours	Bachelor	A general idea of the subject of engineering drawing - its importance - Identifying the tools of engineering drawing - The student learns about the use of tools .	Prac THEO.	PAPERS
Second	3 hours	Bachelor	Types of fonts in geometric drawing - their uses – methods of signing dimensions .	Prac THEO.	PAPERS
third	3 hours	Bachelor	Draw tangents, arcs and curves .	Prac THEO.	PAPERS
Fourth	3 hours	Bachelor	ellipse	Prac THEO.	PAPERS
Five	3 hours	Bachelor	The three projection levels (vertical - horizontal - lateral)	Prac THEO.	PAPERS
Six	3 hours	Bachelor	Splitting the board, choosing the appropriate scale, and organizing the placement of projections to drop simple engineering objects.	Prac THEO.	PAPERS
Seven	3 hours	Bachelor	Finding the three projections - the method of writing dimensions .	Prac THEO.	PAPERS
The eighth	3 hours	Bachelor	Writing dimensions on the drawing - common mistakes when writing dimensions	Prac THEO.	PAPERS

Nine	**3 hours**	**Bachelor**	**Draw the three views of the cylinder .**	**Prac THEO.**	**PAPERS**
Ten	**3 hours**	**Bachelor**	**How to draw models - the angles of drawing models .**	**Prac THEO.**	**PAPERS**
Eleven	**3 hours**	**Bachelor**	**Drawing the cylinder in the isometric holographic shape.**	**Prac THEO.**	**PAPERS**
Twelve	**3 hours**	**Bachelor**	**The conclusion of the third projection with the information of two projections.**	**Prac THEO.**	**PAPERS**
Thirteenth	**3 hours**	**Bachelor**	**Drawing the known projections – the conclusion of the third projection – and then drawing the model**	**Prac THEO.**	**PAPERS**
Fourteenth	**3 hours**	**Bachelor**	**The best level of parts**	**Prac THEO.**	**PAPERS**
Fifteenth	**3 hours**	**Bachelor**	**General Revision**	**Prac THEO.**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	- **Textbooks for each course** - **Indian drawing/ Abdul Rasool Al-Khafaf/ 1986**
Key References (Sources)	- **Resources for each course**
Prevailing books and references that are recommended (scientific journals , reports....)	- **Scientific journals in basic and veterinary specialties**
Electronic references, websites	**Specialized websites**

1. Course Name
Computer Applications 2
2. Course number
UO1
3. Semester / Yea
Chapter Two
4. Date this description was prepared
15/ 1/2023
5. Available Attendance Forms
In-Person
6. Number of study hours (total) Number of units (total)
45
Name of course administrator (if more than one name is mentioned) and email
Eng. M. Ali Hussein Ali Ali.husseinali@uokerbla.edu.iq
Course Objectives

Objectives of the course	– Introducing the student to Microsoft programs – Introducing the student to the Word program Introducing the student to the methods of typesetting, printing and output on Microsoft Word
9 Teaching and Learning Strategies	
OF THE STRATEGY	How to give lectures - Using the method of dialogue and discussion with students to communicate theoretical information to the student. - Applying theoretical lessons in the workshop. - Using computers and presentation during lectures. - Assigning students to prepare reports on each of the knowledge goals to be achieved

10. Course Structure

Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
1	5	Bachelor	define the term computer	Prac THEO.	PAPERS
2	5	Bachelor	|||UNTRANSLATED_CONTENT_START||| برامج Microsoft|||UNTRANSLATED_CONTENT_END|||	Prac THEO.	PAPERS
3	5	Bachelor	Word and how to use it	Prac THEO.	PAPERS
4	5	Bachelor	Creating a Word document and adjusting its written basics	Prac THEO.	PAPERS
5	5	Bachelor	What isthe status of the tools in the Word document?	Prac THEO.	PAPERS
6	5	Bachelor	Insert Icon	Prac THEO.	PAPERS
7	5	Bachelor	Page Layout	Prac THEO.	PAPERS
8	5	Bachelor	Icon of references and vermin	Prac THEO.	PAPERS
9	5	Bachelor	Page Views Icon	Prac THEO.	PAPERS

10	**5**	**Bachelor**	**Document Word icon**	**Prac THEO.**	**PAPERS**
11	**5**	**Bachelor**	**Preservation operations and types**	**Prac THEO.**	**PAPERS**
12	**5**	**Bachelor**	**Print Orders**	**Prac THEO.**	**PAPERS**
13	**5**	**Bachelor**	**Output Exercises**	**Prac THEO.**	**PAPERS**
14	**5**	**Bachelor**	**Correct and change words**	**Prac THEO.**	**PAPERS**
15	**5**	**Bachelor**	**Keyboard shortcuts**	**Prac THEO.**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Textbooks for each course**
Key References (Sources)	**Resources for each course**
Prevailing books and references that are recommended (scientific journals , reports....)	**Scientific journals in computer science specializations**
Electronic references, websites	**Specialized websites**

1. Course Name
Principle of Food Processing
2. Course number
POFI1
3. Semester / Yea
Second Edition 2023-2024
4. Date this description was prepared
23/4/2024
5. Available attendance forms
Mandatory
The total number of study hours is 5 hours and the number of units is 3.5
75 hours and the number of units is 3.5
6. Name of course administrator (if more than one name is mentioned) and email
Name: Prof.Haifa Ali Awad **Email: hayfaa.a@uokerbala.edu.iq**
7. Course Objectives

Objectives of the course :	• **Identify all the ingredients of food** • **Knowing the nutritional importance of food ingredients** • **Knowledge of food preservation methods** • **Knowing the causes of food contamination**
9. Teaching and learning strategies	
OF THE STRATEGY	1- Viewing educational videos for the student 2- Laboratory work and experimentation 3- Legends such as PowerPoint 4-Explanation by the teacher and video recording of the lecture

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical 3 Practical	Food Processing	A brief history of the emergence of the science of food industries	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Questions for Discussion Oral exams Reporting
2	2 Theoretical 3 Practical	Food Ingredients	Carbohydrates , their types , divisions, and nutritional importance	T	T
3	2 Theoretical 3 Practical	Food Ingredients	Proteins, their types ,divisions , and nutritional importance	T	T
4	2 Theoretical 3 Practical	Food Ingredients	Fats , their composition, types, presence in food, their nutritional importance	T	T
5	2 Theoretical 3 Practical	Food Ingredients	Water, its presence , its physiological and biological importance	T	T
6	2 Theoretical 3 Practical	Food Ingredients	Test one:	T	T
7	2 Theoretical 3 Practical	Food Ingredients	Organic Acids, Vitamins , Colours	T	T

8	**2 Theoretical 3 Practical**	**Food Ingredients**	**Enzymes , Hormones**	**T**	**T**
9	**2 Theoretical 3 Practical**	**Types of food stuffs**	**Meat , its types , its nutritional importance, its chemical composition**	**T**	**T**
10	**2 Theoretical 3 Practical**	**Egg**	**Its chemical composition , nutritional importance, and uses**	**T**	**T**
11	**2 Theoretical 3 Practical**	**Second Quiz**	**2 nd Month Test**	**T**	**T**
12	**2 Theoretical 3 Practical**	**Oils and fats**	**Extraction, refining and purification**	**T**	**T**
13	**2 Theoretical 3 Practical**	**Food Preservation**	**- [food preservation]**	**T**	**T**
14	**2 Theoretical 3 Practical**	**Corruption and contamination of food**	**Types of bacteria that infect food**	**T**	**T**

11. Course Evaluation	
Distribution of the score of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly and written examinations and reports	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Food Industry Code of Principles**
Key References (Sources)	**FOOD SAFETY**
|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||)	**None**
Electronic References, Websites	**None**

1. Course Name					
Principle of Animal Production					
2. Course number					
POAP1					
3. Semester / Yea					
Semester II 2023-2024					
4. Date this description was prepared					
24/4/2024					
5. Available Attendance Forms					
In-Person					
6. Number of study hours (total) Number of units (total)					
5 hours , 3.5 units					
7. Name of course administrator (if more than one name is mentioned)					
Name: Eng. Hind Faiq Mahdi Al-Shammari Email: hind.f @uokerbala.edu.iq					
8. Course Objectives					
Objectives of the course	• The course aims to introduce the student to the economic importance of animal products and to know the types of cattle and buffalo breeds and their importance, classification, feeding and care, and to identify the most important field operations followed in the fields of animal husbandry				
9. Teaching and Learning Strategies					
OF THE STRATEGY	- Theoretical lectures - Practical Lessons - Field visits and watching the most important field operations that can be conducted on animals - Search the Internet - Review sources related to livestock production				
10. Course Structure					
Week	Hours	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	2Theoretical 3Practical	Production Principles	Economic importance of livestock Its relationship to economic integration and the future potential for the expansion of animal production in this wealth/a visit to the fields of the Faculty of Agriculture, the field of cows /the field of sheep /the field of poultry/the feed factory	Theory/Practical	Questions for Discussion Oral exams Reporting

2	**2Theoretical 3Practical**	**Production Principles**	**Location of agricultural animals (cattle) in the animal kingdom Joint field operations between cows and sheep**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
3	**2Theoretical 3Practical**	**Production Principles**	**Cows and buffalos/Economic importance/ International, Arab and local species/cow milking process, manual milking, mechanical milking/ preparing cows for milking process**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
4	**2Theoretical 3Practical**	**Production Principles**	**Management and care of milk cows, meat cows, dual-purpose/ suckling young calves, breastfeeding , artificial feeding**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
5	**2Theoretical 3Practical**	**Principles of Animal Production**	**Buffalo, economic importance, the origin of buffalo, distribution in the world, buffalo production of milk and meat, buffalo breeding obstacles/ records, objectives and benefits, types, methods of preservation**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
6	**2Theoretical 3Practical**	**Production Principles**	**Monthly Exam 1**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
7	**2Theoretical 3Practical**	**Production Principles**	**Sheep and goats, ways of classifying them, some international species/scientific trip to the latest livestock projects**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
8	**2Theoretical 3Practical**	**Principles of Animal Production**	**Local species (sheep and goats) and the establishment of a flock of sheep/ identifying the reproductive organs and the method of collecting semen and**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**

			the method of artificially vaccinating cows		
9	**2Theoretical 3Practical**	**Production Principles**	**Feeding and feed / some field operations for sheep**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
10	**2Theoretical 3Practical**	**Production Principles**	**Physiology, reproduction, artificial insemination/ feedstuffs and methods of their classification (coarse feed, concentrated feed, fodder and foraging)**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
11	**2Theoretical 3Practical**	**Principles of Animal Production**	**Genetic improvement in poultry/ grazing and pasture**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
12	**2Theoretical 3Practical**	**Production Principles**	**Horses, assets, species and breeding methods,/animal dwellings (housing types) General considerations for housing construction**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
13	**2Theoretical 3Practical**	**Production Principles**	**Monthly Exam2**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
14	**2Theoretical 3Practical**	**Production Principles**	**Camels, breeds, breeding methods/parasite control and treatments**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**
15	**2Theoretical 3Practical**	**Production Principles**	**Animal/ Equine Health Care Identification, Camel Identification, Discussion of Reports**	**Theory/Practical**	**Questions for Discussion Oral exams Reporting**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Principles of Animal Production by Dr. Najib Tawfiq Ghazal, Dr. Nahil Mohammed Ali and Mr. Radi Khattab**
Key References (Sources)	**A- Reliance on the prescribed curricula issued by the Ministry** **B- Reliance on the curricula prepared by the subject teacher**
Prevailing books and references that are recommended (scientific journals , reports...)	**A- Reliance on the prescribed curricula issued by the Ministry** **B- Reliance on the curricula prepared by the subject teacher**
Electronic References, Websites	**A- Reliance on the prescribed curricula issued by the Ministry** **B- Reliance on the curricula prepared by the subject teacher**

1.Course Name	
Agricultural Machinery and Equipment	
2. **Course number**	
AMEQ1	
3. **Semester / Yea**	
chapter 2	
4. **Date this description was prepared**	
1/2/2024	
5. **Available Attendance Forms**	
In-Person	
6. Number of study hours (total) Number of units (total)	
75 HORUS; 3.5 UNITE	
Name of course administrator (if more than one name is mentioned) and email	
Eng. M. Ali Hussein Ali Ali.husseinali@uokerbla.edu.iq	
Course Objectives	
A1- Enabling students to distinguish between agricultural machinery and agricultural machinery. A2- Enabling students to distinguish between ways of using auxiliary equipment in agriculture A3- Enabling students to identify the devices used to transfer the power generated from the engine and ways to benefit from them in the work of the withdrawn agricultural equipment.	
9 Teaching and Learning Strategies	
OF THE STRATEGY	**How to give lectures** **- Using the method of dialogue and discussion with students to communicate theoretical information to the student.** **- Applying theoretical lessons in the workshop.** **- Using modern agricultural appliances and machines.** **- Using computers and presentation during lectures.** **- Assigning students to prepare reports on each of the knowledge goals to be achieved.**

10. Course Structure					
Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
1	5	Bachelor	General Introduction to Agricultural Machinery - Classification of Agricultural Machinery	Prac THEO.	PAPERS
2	5	Bachelor	Mobility - Means of Power Transmission	Prac THEO.	PAPERS
3	5	Bachelor	Front of engines - engine parts	Prac THEO.	PAPERS
4	5	Bachelor	Internal Combustion engines.	Prac THEO.	PAPERS
5	5	Bachelor	Identify combustion and power generation methods	Prac THEO.	PAPERS
6	5	Bachelor	Get familiar with the cooling system	Prac THEO.	PAPERS
7	5	Bachelor	Learning about lubrication methods	Prac THEO.	PAPERS
8	5	Bachelor	Identify the lifting system and the reduction of agricultural machinery	Prac THEO.	PAPERS
9	5	Bachelor	Learn about the stopping system	Prac THEO.	PAPERS
10	5	Bachelor	Introduction to Agricultural Mechanization Tools	Prac THEO.	PAPERS
11	5	Bachelor	Identify plows	Prac THEO.	PAPERS
12	5	Bachelor	Service recognition programs	Prac THEO.	PAPERS
13	5	Bachelor	Identify anti-bush machinery	Prac THEO.	PAPERS
14	5	Bachelor	Learn about traditional harvesting	Prac THEO.	PAPERS
15	5	Bachelor	Identify post-harvest machinery	Prac THEO.	PAPERS

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
▪ Required course books	- Textbooks for each course - Fundamentals of Drawers and Agricultural Equipment/ Translation: Lutfi Hussein/ Dr.Tawfiq Fahmy/ Faculty of Agriculture/University of Baghdad
Key References (Sources)	- Resources for each course - Pullers and orchard mechanization equipment/ Dr. Abdul Rahman Ayoub
Recommended books and references |||UNTRANSLATED_CONTENT_START||| ()|||UNTRANSLATED_CONTENT_END|||	Scientific journals in basic and veterinary specialties
أ- Electronic References	Specialized websites

1. Course Name
Principles of Statistics
2. Course number
STAT1
3. Semester / Yea
Second Semester/ 2023-2023
4. Date this description was prepared
5. Available Attendance Forms
In-Person
6. Number of study hours (total) Number of units (total)
5 hours , 3.5 units
7. Name of course administrator (if more than one name is mentioned)
Dr. Ali Nazem Farhoud Email: ali.nazem@uokerbala.edu.iq
8. Course Objectives

Objectives of the course	• Students gain experience, skill and ability to deal with and analyze data • Dealing with various statistical methods. • Analyze agricultural data, make decisions, and communicate effectively.
9 Teaching and Learning Strategies	
OF THE STRATEGY	1. Focus on agricultural applications: Real-life examples: Use real-life examples and case studies from agriculture to illustrate statistical concepts. Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the practical applications of statistics. * Use of technology. Statistical software: Teaching students how to use common statistical software, Simulation: Using simulation software to represent statistical phenomena and enhance understanding of concepts. E-learning resources: Providing e-learning resources, such as videos and interactive exercises, Active Learning Group Discussions: Encourage students to discuss statistical concepts and solve problems together. Ongoing Evaluation: Assignments and Quizzes: Assess students' understanding of statistical concepts through assignments and quizzes. 5. Linking statistics to other courses

10. Course Structure

Week	Hours	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	5	Understand the basic principles of statistics	Introduction and definition of the process	Lectures	Paper-based daily exam
2	5	Learn Statistical Symbols	Statistical Codes	Lectures	Paper-based daily exam
3	5	Provide students with the ability to view data and repeat distribution	Data view and frequency distribution	Exercises	Problem solving

4	**5**	**Students' understanding and comprehension of mediation measures**	**Intermediation Metrics**	**Exercises**	**Problem solving**
5	**5**	**Students' knowledge of dispersion measures and ability to apply them**	**- Measures of dispersion.**	**Exercises**	**Problem solving**
6	**5**	**Students' understanding of the principles of compatibility and exchange**	**Compatibility and exchange**	**Exercises**	**Problem solving**
7	**5**	**Monthly Exam**	**Monthly Exam**		
8	**5**	**Ability to solve applied problems for binomial distribution**	**Binomial distribution**	**Exercises**	**Problem solving**
9	**5**	**Ability to solve practical problems Normal distribution**	**Normal distribution**	**Exercises**	**Problem solving**
10	**5**	**Ability to solve practical problems Testing hypotheses Z**	**Testing hypotheses Z**	**Exercises**	**Problem solving**
11	**5**	**Ability to solve applied problems t distribution**	**t-distribution**	**Exercises**	**Problem solving**
12	**5**	**Ability to solve practical problems F distribution**	**Distribution F**	**Exercises**	**Problem solving**
13	**5**	**Ability to solve practical problems Chi-square distribution**	**Chi-squared distribution**	**Exercises**	**Problem solving**
14	**5**	**General Revision**	**General Revision**	**Exercises**	**Problem solving**
15	**5**		**Monthly Exam**		

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Al-Rawi, Khasha Mahmoud. 1989. Introduction to Statistics. Faculty of Agriculture – University of Mosul.**
Key References (Sources)	**Hoshmand, R. (2017). *Statistical methods for environmental and agricultural sciences*. CRC Press, 2018.**
Prevailing books and references that are recommended (scientific journals , reports...)	**Rangaswamy, R. (1995). *A text book of agricultural statistics*. New age international.**
Electronic References, Websites	**https://www.realityworks.com/blog/10-online-resources-for-agriculture-classrooms/?v=560e51228bc1**

Phase II decisions

1 Course Name	
Baath Party crimes	
2 Course Code	
BAAC102	
3. Semester / Year:	
First Semester/ 2023-2024	
4 Description Preparation Date :	
2023/12/18	
Available Attendance Forms:	
Presences	
Number of Credit Hours (Total) / Number of Units (Total)	
hours / 1 unit	
7.Course administrator's name (mention all, if more than one name)	
Name:Prof.Dr. Khudair Yassin Al-Ghanmi **Email : kudir.yassen@uokerbala.edu.iq**	
8 Course Objectives	
Objectives of the course :	• **Create a student generation that has a sufficient and comprehensive information base about the crimes of the Baath Party in all its details against the Iraqi people throughout its rule over the Iraqi people** • **Students gain experience and documented scientific knowledge on excellence and knowledge enhanced by the evidence and methods of the Baath regime and how the regime uses types of methods of oppression, injustice and impoverishment against the Iraqi people Dealing with and analyzing data** • **Creating a base of information among students about the absurd wars waged by the Baath regime against the Iraqi people and neighboring countries, which led to the collapse of the foundations of states, sovereignty, the Iraqi economy, and the principles and foundations of rights.**
9.. |||UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END|||	
OF THE STRATEGY	**Active Learning** **By listing examples for each item of the approved curriculum and leaving the field for students to think critically, think creatively, search and explore in the academic and community environment and compare them in the reality that currently exists.** **Using and comparing examples and studies of a realistic case of democratic systems and their foundations, the system of rights and freedoms, and the existing international law to illustrate the historical development of the vocabulary of the material.** **Brainstorming strategies and focusing on putting the student's mind in a state of readiness and anticipation; to generate the largest number of automatic ideas about the vocabulary subject of the lesson and identify the problem or violate reality in order to solve it, after sifting these ideas and selecting the best among them.**

	E-learning resources: Providing e-learning resources, such as videos about these crimes and reports issued by United Nations human rights organizations. **Group discussions by giving and encouraging students to discuss the concepts contained in each vocabulary of the material and bring them back together.** **Ongoing Evaluation:** **Assignments and Quizzes: Assess students' understanding of concepts and substance through assignments and quizzes.**

10 Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	2	Understanding basic principles of seating for Crimes	Introduction and Definitions , Jazb Al-Baath Crimes according to the Iraqi Supreme Criminal Court System 2005, the concept of crimes and their types.	Lectures	Paper-based daily exam
2	2	A legal description of the crimes and their types according to the stability of the jurisprudence –	Crimes Sections	Lectures	Direct oral questions for each student
3	2	Providing students with the scientific ability to understand the subject	Decisions of the Iraqi Supreme Criminal Court	====	======
4	2	=======	Psychosocial crimes, their types and effects, and the most prominent violations of them by the Baathist regime	=====	====
5	2	Students' knowledge of these crimes through careful explanation of the vocabulary of the vocabulary	Social Crimes and Militarization of Society	Do this as a household or family.	=====
6	2	Students' understanding of principles in international laws governing human rights and democracy	The position of the Baathist regime on religion, and pictures of violations of Iraqi laws and crimes of authority	====	Paper-based daily exam
7	2	Monthly Exam	Monthly Exam		
8	2	Students' understanding of the crimes caused by the regime in the Iraqi environment and knowledge of the international laws governing these crimes	Chapter Three, Environmental Crimes of the Baath Regime	=====	======
9	2	Knowing that the Baath regime violated Iraqi	Urban destruction, radioactive contamination and scorched earth policy	====	Oral questions and answers from students

		laws and international law			by specifying the name
10	2	Providing students with the scientific ability to understand the material in its unit step by step	Drying the marshes and dredging the orchards	======	Oral questions and answers from students by specifying the name
11	2	========	Chapter Four \ Mass Graves Crimes	=====	=======
12	2	======	Mass graves.	=====	======
13	2		Temporal Classification of Mass Graves in Iraq	=====	======
14	2	General Revision	General Revision	====	approximation.
15	2		Monthly Exam	====	

11.Course Evaluation	
Theoretical Quarterly Tests (40%) – Daily Oral and Paper Tests and Questions (10%) The Theoretical Final Test (50%).	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	Crimes of the Baath regime in Iraq

1. Course Name	
Organic Farming	
2. Course number	
ORFA2	
3. Semester / Year:	
First semester 2023-2024	
4. Date this description was prepared	
23/10/2023	
5. Available attendance forms	
Presences	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 Hours ; 3.5 Units	
7. Course administrator's name (mention all, if more than one name)	
Name : Eng. Ivan Ad Abed **Email; - evan.abd@uokerbala.edu.iq**	
8. Course Objectives	
Objectives of the course :	**Preparing and qualifying engineers specialized in the use of organic agriculture through the use of many methods of education and training students to apply agricultural programs in organic agriculture and granting the student a bachelor's degree in the theoretical and practical aspects to serve the preparation of a graduate of a prestigious level in the practical arena**
9. Teaching and learning strategies	
OF THE STRATEGY	**Teaching and learning methods** **- Providing students with additional basics related to the outputs of thinking and analysis** **- Forming a discussion group to discuss various agricultural topics that form the methods and principles of organic agriculture.** **- Asking intellectual questions during lectures that include (what, how, when, why and if)** **Preparing students with homework assignments that require subjective explanations for some questions that need causal answers.** **Evaluation methods** **Daily exams with discussion questions within the lecture .** **Degree of participation in questions related to the subject (principles of organic agriculture) .** **Specific grades for field duties and reports on some plants produced by organic farming.** **C1- Asking general questions during lessons and lectures .** **C2 -Assigning students with reports on various agricultural topics, especially the principles of organic agriculture** **C3- Discussing and directing graduation research for students of the third and fourth stages** **C4-Enablestudents to conduct all agricultural operations correctly during the use of organic farming systems.**
10. Course Structure	

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method

1	**5**	**Bachelor**	**Definition and Importance of Organic Farming**	**Prac THEO.**	**PAPERS**
2	**5**	**Bachelor**	**Areas of Organic Farming Prevalence**	**Prac THEO.**	**PAPERS**
3	**5**	**Bachelor**	**Types and Sources of Organic Matter**	**Prac THEO.**	**PAPERS**
4	**5**	**Bachelor**	**Organiccompounds,CO**	**Prac THEO.**	**PAPERS**
5	**5**	**Bachelor**	**Month 1**	**Prac THEO.**	**PAPERS**
6	**5**	**Bachelor**	**Decomposition of organic compounds (cellulose , hemocellulose , protein ,starch , pectin , chitin**	**Prac THEO.**	**PAPERS**
7	**5**	**Bachelor**	**Decomposition of nitrogenous and non-nitrogenous organic compounds**	**Prac THEO.**	**PAPERS**
8	**5**	**Bachelor**	**Humus formation and humic acid aggregates**	**Prac THEO.**	**PAPERS**
9	**5**	**Bachelor**	**Interference of Organic Matter Colloids, Soil Colloids and Organic Matter Soil Content**	**Prac THEO.**	**PAPERS**
10	**5**	**Bachelor**	**Second month**	**Prac THEO.**	**PAPERS**
11	**5**	**Bachelor**	**Conditions of organic agriculture and some of its laws and the use of organic pesticides**	**Prac THEO.**	**PAPERS**
12	**5**	**Bachelor**	**Quality and quantity of production in organic agriculture**	**Prac THEO.**	**PAPERS**
13	**5**	**Bachelor**	**Decomposition of nitrogenous compounds**	**Prac THEO.**	**PAPERS**
14	**5**	**Bachelor**	**The role of organic matter in soil fertility, biology and physical qualities**	**Prac THEO.**	**PAPERS**
15	**5**	**Bachelor**	**General Revision**	**Prac THEO.**	**PAPERS**

11.Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	**Course textbook is Fundamentals in Organic Agriculture 2012 / d. Mowaffaq Mazban and Dr. Omar Hashem Musleh**
Key References (Sources)	**Sources supporting the course is the book of organic agriculture, its specifications and importance in human health 2010 /Azmi Mohammed Abu Al-Rayyan, Faculty of Agriculture / University of Jordan .**
Recommended books and references **(**scientific journals,reports ,.....) **)**	**Scientific journals in basic and veterinary specialties**
Electronic references, websites	**Specialized websites**

1. Course Name	
Arabic Language	
2. Course number	
UOP213	
3. Semester / Year	
First semester 2023-2024	
4. Date this description was prepared	
25/10/2023	
5. Available attendance forms	
Presences	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours/2units	
7. Course administrator's name (mention all, if more than one name)	
Eng. Waad Hamed Yas waead.h@uokerbaia.edu.iq	
8. Course Objectives	
Objectives of the course :	Course Objectives Developing a spirit of pride in the Arabic language. Develop the student's language skills. Upgrading the level of professional and research students. Developing the grammatical and literary abilities of the university student.
9. Teaching and learning strategies	
OF THE STRATEGY	- Lecture, use of blackboard and delivery. - Demonstrations using diagrams and pictures. Keynote speaker: Self-Education - Organizing lectures prepared by students.

10. Course Structure					
Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
1	2	BS	The importance of the Arabic language. Why do we study Arabic and why is it important? Why is Arabic called the language of the Qur 'an? What are the other labels for Arabic?	Theoretical	PAPERS
2	2	BS	Interpreting and memorizing twenty verses of Surat Yusuf while standing at the words and their connotations, and their meanings, and highlighting the rhetorical and educational aspect that it includes.	Theoretical	PAPERS
3	2	BS	Grammar in grammar (speech and what it consists of) What are you talking about? What is the difference between speech, speech and word? What are the sections of the word? What are the signs of names, verbs, letters and their divisions?	Theoretical	PAPERS
4	2	BS	The actual sentence and the types of acts in terms of necessity, infringement, health and morbidity.	Theoretical	PAPERS
5	2	BS	Nominal sentence What is a nominal sentence? What is the definition of the subject and the news? What are the types of beginner? What are the types of news?	Theoretical	PAPERS
6	2	BS	Nominal Sentence Copiers (Copied Verbs).	Theoretical	PAPERS
7	2	BS	Characters that are already similar and their meanings and syntax are examples of them.	Theoretical	PAPERS
8	2	BS	Month 1	Theoretical	PAPERS
9	2	BS	Effects in Arabic (effect in it, absolute effect, effect for it)	Theoretical	PAPERS
10	2	BS	Numbers and the rules of their writing and parsing/syntax.	Theoretical	PAPERS
11	2	BS	Arabic literature, the priorities of prose and its types, and the preservation of selections from it Arabic Poetry Ages of Arabic Poetry and Artistic and Objective Attributes (Art of the article) with selected templates memorized	Theoretical	PAPERS
12	2	BS	Abu Alaa Al-Maari (his life, topics, and literary works) with memorizing verses from the poem (Tired of All Life)	Theoretical	PAPERS
13	2	BS	What is the life of the poet Abu Firas Al-Hamdani? Reading a poem: (the mourning pigeon) controlled by movements. Analyzing and clarifying the verses of the poem. Poet's Literary Text: Abu Firas Al-Hamdani	Theoretical	PAPERS
14	2	BS	The rules of writing Ta and Hamza in Arabic.	Theoretical	PAPERS
15	2	BS	Difference between Zad and Za ' What do we mean by the phenomenon of the difference between Zad and Za? Why is Arabic called the language of the opponent? What is the difference between zad and za?	Theoretical	PAPERS

16	2	BS	Punctuation in Arabic Roll	Theoretical	PAPERS
17	2	BS	Second month	Theoretical	PAPERS

11. Course Evaluation	
Theoretical Quarterly Tests (35%) – Attendance (5%) – Activities (5%) – Assignments (5%) – Theoretical Final Test (50%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	
Key References (Sources)	**The Holy Quran** **Ibn 'Aqīl** **Into Arabic** **- The collector of Arabic lessons.** **- Arabic grammar and facilitated morphology.** **- Dictation rules.**
Prevailing books and references that are recommended (scientific journals , reports....)	Scientific journals in the specialties of the Arabic language.
Electronic references, websites	- Many websites that are concerned with the Arabic language, including YouTube and scientific research.

1. Course Name/Plant Environment					
plant ecology					
2. Course number					
PLEC2					
3. Semester / Year::					
Second Semester II 2023-2024					
4. Date this description was prepared					
22/10/2023					
5. Available attendance forms					
Presences					
6. Number of Credit Hours (Total) / Number of Units (Total)					
75 hours , 3.5 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Hisham Aziz Omran Email: Hisham.aziz@uokerbala.edu.iq					
8. Course Objectives					
Objectives of the course :	**1. Understand the basics and details of the formation of the optimal environment for plant growth and the impact of environmental factors on it. 2. Introduce students to plant diversity and the environmental importance of plant conservation and ecological balance. 3. Enhance practical skills in monitoring and studying plants in their natural environment and analyzing environmental impacts on them.**				
9. Teaching and learning strategies					
OF THE STRATEGY	**1. Encourage students to field explore and practical experiences to understand the role of plants in the natural environment. 2. Leverage technology such as plant-specific applications to promote effective interaction and learning. 3. Encourage cooperation between students in the study of plants and the exchange of knowledge to stimulate collective learning.**				
10. Course Structure					
Week	**Hours**	**Intended Learning Outcomes**	**Unit or Topic Name**	**Learning method**	**Valuation Method**
1	**5**	**The concept of ecology and its relationship to other sciences**	**Practical Study on the Characteristics of Plant Communities**	**Lectures**	**Paper-based daily exam**
2	**5**	**Solar radiation and its wavelengths**	**Sampling Method and Recipes, Natural Food Chain**	**Lectures**	**Paper-based daily exam**
3	**5**	**Effect of Light on Plants**	**To know the methods of measuring the intensity of lighting and its devices**	**Exercises**	**Problem solving**
4	**5**	**Temperatures and factors affecting them**	**Analysis of the impact of lighting on the vital activities of horticultural plants**	**Exercises**	**Problem solving**

5	5	Preferred and Non-Preferred Plant Temperatures	Conducting a study on the impact of lighting on the level of growth and elongation of horticultural plants	Exercises	Problem solving
6	5	relative humidity	Learning about heat measurement methods and devices	Exercises	Problem solving
7	5	First Month Exam	Indication of levels of temperatures during the day and the changes that you get (daily air and soil temperature regime)		
8	5	Scientific Journey	Indication of levels of temperatures during the day and the changes that you get (daily air and soil temperature regime)	Exercises	Problem solving
9	5	Water and its relationship to plants	Study on the effect of temperatures on different plants	Exercises	Problem solving
10	5	Water and its relationship to plants	Tradition on the image of water in nature and annual measurements of the water levels required for horticultural plants	Exercises	Problem solving
11	5	Atmospheric pressure and influencing factors	Tradition on the image of water in nature and annual measurements of the water levels required for horticultural plants	Exercises	Problem solving
12	5	Wind, its types and effects	Methods of measuring wind intensity and showing its impact on horticultural plants	Exercises	Problem solving
13	5	Fires and their plant adaptations	Identify different types of environments	Exercises	Problem solving
14	5	Environmental pollution	Studying the harm that pollution causes to horticultural plants	Exercises	Problem solving
15	5	Second Month Exam	Statement of the impact of fires on changes in the ambient climate		

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Ecology**
Key References (Sources)	**sources**

Course Name					
Microbiology					
Course number					
MICR2					
Semester / Year:					
Second Semester					
Date this description was prepared					
23/4/2024					
Available attendance forms					
Presences					
Number of Credit Hours (Total) / Number of Units (Total)					
75 Hours ; 3.5 Units					
Course administrator's name (mention all, if more than one name)					
Prof. Dr. Zainab Aliwi Mohamed Zainab.mohammed@uokerbala.edu.iq					
Course Objectives					
Objectives of the course :	1. Determines the characteristics of plant cells 2-Study the types and composition of plant cells and organs 3-Types of plant tissues, their description and characteristics				
9. Teaching and learning strategies					
OF THE STRATEGY	Teaching and learning methods 1- Showing educational videos to the student 2-Working with the mukhtar and conducting experiments 3-Explanatory aids such as PowerPoint 4- Explanation by the teacher and video recording of the lecture				
10. Course Structure					
Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1+2	5	|||UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END|||	General historical overviewLearn about the most important basic principles in plant anatomy	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Questions for Discussion Oral exams Reporting
3,4	5	|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||	The most basic terms used in plant anatomy	T	T
5, 6	5	|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||	Living and non-living cells	T	T
7, 8	5	|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLA	Anatomy of simple tissues and their types	T	T

		TED_CONTENT_END|||			
9, 10	**5**	**|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||**	**Anatomy of tissues and their types and types**	T	T
11, 12	**5**	**|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||**	**Leg Anatomy**	T	T
13, 14	**5**	**|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||**	**Root Anatomy**	T	T
15	**5**	**|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||**	**Monthly exams interspersed with weeks**	T	T

Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
Learning and Teaching Resources	
Required textbooks (methodology if any)	**Plant diseases/Hussein Al-Arousi, Samir Mikhail and Hamid Ali Abdel Moneim**
Key References (Sources)	**Basics of Plant Anatomy/ Dr.Badri Awaid Al-Ani**
Recommended books and references **(**scientific journals,reports ,.....) **)**	**Plant Morphology and Anatomy/Hussein Al-Arousi**
Electronic references, websites	**Electronic Life Sciences Library**

1. Course Name
Horticultural Pests Insects
2. Course number
HOPE2
3. Semester / Year:
Second Semester
4. Date this description was prepared
2/3/2024
5. Available attendance forms
Compulsory
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours/ 2.5 units
Course administrator's name (mention all, if more than one name)
Eng.Sawsan Fadhil Fawaz sawsan.fadhel@uokerbala.edu.iq
Course Objectives

Objectives of the course :	• **Giving a general introduction to entomology in a simple way.** • **Introduce the student to the basic principles of insects.** • **Enabling students to know the symptoms and signs of infection with horticultural insects and methods of control.**
9. Teaching and learning strategies	
OF THE STRATEGY	**1. Focus on agricultural applications:** **Real-life examples: Introducing the student to insect families and their importance** **Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the symptoms of insect infestation and methods of control .** *** Use of technology.** **Display illustrations of various horticultural insects and their damage.** **Simulation: Using simulation programs to ask thinking questions during lectures, including(what, how, when and why) .** **E-learning resources: Providing e-learning resources, such as videos and interactive exercises,** **Active Learning** **Group Discussions: Encourage students to discuss injuries, symptoms, and problem solving together.:** **Ongoing Evaluation:** **Assignments and tests: Assess students' understanding of harmful insect types and symptoms through assignments and tests.** **5. Linking gardening entomology to other courses**

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	5	Bachelor	Introduction to entomology , factors that helped insects spread , pests, their types and harms, benefits and harms of insects Practical (features of insect class, insect body sections, head and appendages)	Theoretical	PAPERS
2	5	Bachelor	The life characteristics of insects , the egg phase, the nymph phase and the larval phase, the virgin phase, the formation in	Theoretical	PAPERS

			insects , the methods of insect reproduction, the types of hibernation in insects . Practical (chest and its appendages)		
3	5	Bachelor	Foundations of Pest Control , Methods of Pest Control Practical (abdomen and its appendages, impossibility or transformation (evolution in insects and their types))	Theoretical	PAPERS
4	5	Bachelor	Fruit Trees Apple trees Practical (apple bugs) The appearance of the infestation and the description of the insect	Theoretical	PAPERS
5	5	Bachelor	The first semester exam is theoretical Practical (First Quarter Exam Practical)	Theoretical	PAPERS
6	5	Bachelor	Olive Tree Insects Pistachio Tree Insects Practical (olive and pistachio insects) The appearance of injury and damage and the description of the insect .	Theoretical	PAPERS
7	5	Bachelor	Grape bugs Canned Stone Fruit Practical (grape insects, stone-kernel fruit tree insects) The appearance of injury and damage and the description of the insect	Theoretical	PAPERS
8	5	Bachelor	Pomegranate insects Fig Insects Practical (pomegranate insects, fig insects) The appearance of injury and damage and the description of the insect	Theoretical	PAPERS
9	5	Bachelor	Citrus insects Palm insects Practical (citrus insects, palm insects)) The appearance of injury and damage and the description of the insect	Theoretical	PAPERS
	5	Bachelor	Second Quarterly Theoretical Examination Practical (Second Quarter Exam)	Theoretical	PAPERS
11	5	Bachelor	Vegetable insects Insects of the leguminous family Pumpkin family insects Practical (vegetable insects, leguminous family insects, pumpkin family insects) appearance of injury and damage and description of the insect	Theoretical	PAPERS
12	5	Bachelor	Insects of the marshmallows family, the ramyamid family and the lily family Practical (marshmallows , rumamia , lily) appearance of injury and damage and description of the insect	Theoretical	PAPERS

13	**5**	**Bachelor**	**Multifamilial insects, locusts , aphids , whitefly , blackbiteworm, excavators Practical (Multifamilial insects, locusts , aphids , whitefly, blackbiteworm , excavators) Infestation and damage appearance and description of the insect**	**Theoretical**	**PAPERS**
14	**5**	**Bachelor**	**Ornamental plant insects, ground Practical (ornamental plant insects, ground) appearance of injury and damage and description of the insect**	**Theoretical**	**PAPERS**
15	**5**	**Bachelor**	**General Revision**	**Theoretical**	**PAPERS**

Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
Learning and Teaching Resources	
Required textbooks (methodology if any)	Textbooks
Key References (Sources)	
Recommended books and references (scientific journals,reports ,.....) **)**	Scientific journals within the specialization
Electronic references, websites	|||UNTRANSLATED_CONTENT_START||| |||UNTRANSLATED_CONTENT_END|||

1. Course Name
1. Nurseries and Propagation
2. Course number
NUPR2
3. Semester / Year
Second semester 2023-2024
4. Date this description was prepared
23/4/2024
5. Available attendance forms
Compulsory
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
hisham.aziz@uokerbala.edu.iq **Hisham Aziz Omran Saud Al Abbas**
8. Course Objectives

Objectives of the course :	**Introducing the student to the foundations of international plant breeding and plant breeding facility in greenhouses, glass houses, cold and heated bunkers, and others**
9. Teaching and learning strategies	
OF THE STRATEGY	**. Adopting the lecture style** **2. Teach the student the basic concepts of the subject and topics related to knowledge and understanding of the subject.** **3. Theoretical lessons in addition to practical lessons, observations, training and the field of report writing.** **4. Writing reports on topics related to the material using the Internet and other sources** **Active Learning** **Group Discussions: Encourage students to ask some factual questions about the topic.**

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method

1	**5**	**Bachelor**	**Historical overview of the emergence, evolution and multiplication of plants**	**Prac THEO.**	**PAPERS**
2	**5**	**Bachelor**	**Seed propagation, advantages and disadvantages of seed propagation**	**Prac THEO.**	**PAPERS**
3	**5**	**Bachelor**	**Transactions that encourage seed multiplication, environmental conditions and their impact on seed germination**	**Prac THEO.**	**PAPERS**
4	**5**	**Bachelor**	**Cellular foundations for seed propagation**	**Prac THEO.**	**PAPERS**
5	**5**	**Bachelor**	**Vegetative propagation of plants**	**Prac THEO.**	**PAPERS**
6	**5**	**Bachelor**	**Methods of vegetative propagation , environmental conditions and their relationship to the success of propagation**	**Prac THEO.**	**PAPERS**
7	**5**	**Bachelor**	**The physiological and anatomical foundations of vegetative propagation**	**Prac THEO.**	**PAPERS**
8	**5**	**Bachelor**	**multiplication by specialized parts, multiplication by layering**	**Prac THEO.**	**PAPERS**
9	**5**	**Bachelor**	**Tubers , crabs ,purlins , natural structures suitable for vegetative propagation**	**Prac THEO.**	**PAPERS**
10	**5**	**Bachelor**	**Vaccination multiplication**	**Prac THEO.**	**PAPERS**
11	**5**	**Bachelor**	**Production of fruit assets**	**Prac THEO.**	**PAPERS**
12	**5**	**Bachelor**	**Micropropagation of plants , propagation by tissue cultivation**	**Prac THEO.**	**PAPERS**
13	**5**	**Bachelor**	**Methods of accurate propagation of plants**	**Prac THEO.**	**PAPERS**
14			**A test of the scientific material**		

Course Evaluation	
Theoretical Quarterly Tests (20%) – Practical Quarterly Tests (20%) – Practical Daily Tests (10%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
Learning and Teaching Resources	
Required textbooks (methodology if any)	**The Book of Nurseries and the Propagation of Plants**
Key References (Sources)	
Recommended books and references **(**scientific journals,reports ,.....) **)**	
Electronic references, websites	

1. Course Name	
Agricultural Weed Control	
1. Course number	
AGWC2	
2. Semester / Year:	
Second semester	
3. Date this description was prepared	
24/4/2024	
4. Available attendance forms	
Presences	
5. Number of Credit Hours (Total) / Number of Units (Total)	
75 Hours/ 3.5Units	
2 Course administrator's name (mention all, if more than one name)	
sabah.alrubaay@uokerbala.edu.iq	
Course Objectives	
Objectives of the course :	It aims to teach students the concept of the bush, its characteristics, its locations, risks and various ways to combat it and reduce its damage and losses
9. Teaching and learning strategies	
OF THE STRATEGY	**How to give lectures** **- Using the method of dialogue and discussion with students to deliver theoretical information to the student .** **Theory lesson.** **- Using projectors during lectures .** **- Assigning homework to students, preparing scientific reports on the specialization**
10. Course Structure	

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	5	Bachelor	Introduction to the concept of Agals and a historical review of the development of this science	Prac THEO.	PAPERS
2	5	Bachelor	Characteristics of the bushes, methods of classifying them and their most important divisions	Prac THEO.	PAPERS
3	5	Bachelor	Different ways of spreading the jungle	Prac THEO.	PAPERS
4	5	Bachelor	Anti-Bush Methods: Mechanical Method	Prac THEO.	PAPERS
5	5	Bachelor	Flame Burn Method	Prac THEO.	PAPERS
6	5	Bachelor	Biological method	Prac THEO.	PAPERS
7	5	Bachelor	Chemical Method (Pesticides)	Prac THEO.	PAPERS
8	5	Bachelor	Pesticides & Plant	Prac THEO.	PAPERS

9	**5**	**Bachelor**	**Electoral pesticides**	**Prac THEO.**	**PAPERS**
10	**5**	**Bachelor**	**Pesticides and Soil**	**Prac THEO.**	**PAPERS**
11	**5**	**Bachelor**	**Fighting the jungle in the fields**	**Prac THEO.**	**PAPERS**
12	**5**	**Bachelor**	**Fighting jungles in nurseries and orchards**	**Prac THEO.**	**PAPERS**
13	**5**	**Bachelor**	**Water Jungle Control Methods**	**Prac THEO.**	**PAPERS**
14	**5**	**Bachelor**	**Physiology, absorption and transport of pesticides in the soil**	**Prac THEO.**	**PAPERS**
15	**5**	**Bachelor**	**Physiology, absorption and transport of pesticides in the soil**	**Prac THEO.**	**PAPERS**

11.Course Evaluation	
Theoretical Quarterly Tests (25%) – Practical Quarterly Tests (10%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (40%)	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	The bushes and the basics of combating. 2009.Salem Hammadi Al-Obaidi
Key References (Sources)	
Recommended books and references (scientific journals,reports ,.....) **)**	
Electronic references, websites	

1. Course Name
Principles of Agricultural Extension
2. Course number
AGEX2
3. Semester / Year:
First Semester/ 2023-2024
4. Date this description was prepared
25/10/2023
5. Available Attendance Forms
Presences
6. Number of study hours (total) Number of units (total)
30 hours , 2 units
Name of course administrator (if more than one name is mentioned)
Name: Eng. Aliwi Abdul Redha **https://classroom.google.com/u/1/c/NzI2NzQwODM5ODRa**

Course Objectives	
Objectives of the course	• **Students gain experience, skill and ability to deal with farmers** • **Dealing with various guiding methods.** • **Analysis of agricultural extension relationships, decision-making and effective communication.**

9. Teaching and Learning Strategies	
OF THE STRATEGY	**1. Focus on agricultural applications:** **Real-life examples: Use real-life examples and case studies from agriculture to illustrate indicative concepts.** **Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the practical applications of extension science.** *** Use of technology.** **Mentorship Programs: Teaching students how to use popular mentorship programs,** **Simulation: Using simulation software to represent statistical and extension phenomena and enhance understanding of concepts.** **E-learning resources: Providing e-learning resources, such as videos and interactive exercises,** **Active Learning** **Group Discussions: Encourage students to discuss counseling concepts and problem solving together.** **Ongoing Evaluation:** **Assignments and Quizzes: Assess students' understanding of counseling concepts through assignments and quizzes.** **5. Linking agricultural extension science with other courses**

10. Course Structure

Week	**Hours**	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	**2**	Historical Brief.	Historical Brief.	**Lectures**	**Paper-based daily exam**

2	**2**	Introducing agricultural extension.	Introducing agricultural extension.	**Lectures**	**Paper-based daily exam**
3	**2**	The importance of agricultural extension.	The importance of agricultural extension.		
4	**2**	Principles of Agricultural Extension.	Principles of Agricultural Extension.		
5	**2**	Agricultural Extension Objectives.	Agricultural Extension Objectives.		
6	**2**	Communication, A- Definition of the process, B- Elements of the process, C- Factors affecting the effectiveness of communication.	Communication, A- Definition of the process, B- Elements of the process, C- Factors affecting the effectiveness of communication.		
7	**2**	Rural leadership. A- Introducing leadership, B- Classifying rural leadership, C- The importance of each type of leadership.	Rural leadership. A- Introducing leadership, B- Classifying rural leadership, C- The importance of each type of leadership.		
8	**2**	Adoption and spread of agricultural developments (technologies).	Adoption and spread of agricultural developments (technologies).		
9	**2**	Program Planning	Program Planning		
10	**2**	Agricultural Extension Methods and Extension Means.	Agricultural Extension Methods and Extension Means.		
11	**2**	Evaluation of extension programs	Evaluation of extension programs		
12	**2**	Agricultural Extension Methods and Extension Means.	Agricultural Extension Methods and Extension Means.		
13	**2**	Agricultural extension in Iraq and its stages of development	Agricultural extension in Iraq and its stages of development		
14		**Audit**	**Audit**		
15	**2**	Agricultural Extension Methods and Extension Means.	Agricultural Extension Methods and Extension Means.		

11. Course Evaluation	
Theoretical Quarterly Tests (40%) — Daily Tests (10%) — Theoretical Final Test (50%).	
12. Learning and Teaching Resources	

Required textbooks (methodology if any)	Authorized source//Agricultural Guidance Book. Written by Dr. Abdullah Al-Samarrai
Key References (Sources)	Authorized source//Agricultural Guidance Book. Written by Dr. Abdullah Al-Samarrai
Prevailing books and references that are recommended (scientific journals , reports...)	**Websites**
Electronic References, Websites	

Course Name
plant nutrition
Course number
PLNU2
Semester / Year:
First Semester/ 2023-2024
Date this description was prepared
25/10/2023
Available Attendance Forms
Presences
Number of study hours (total) Number of units (total)
75 hours, 3.5 units
Name of course administrator (if more than one name is mentioned)
Name:MD Kazem Mohammed Abdullah Email:kadum.m@uokerbala.edu.iq

Course Objectives	
Objectives of the course	Learn about plant nutrition science. Identify nutrients and their divisions. Recognize the importance of plant nutrients. Methods of transferring nutrients to plants. Increase student's ability to recognize soil fertility through soil and plant analysis
9Teaching and Learning Strategies	
OF THE STRATEGY	1. Adopting the lecture style and linking each topic with examples from reality. 2. Teach the student the basic concepts of the subject and topics related to knowledge and understanding of the subject. 3. Theoretical lessons in addition to practical lessons, observations, training, laboratory experiments and report writing field. 4. Writing reports on topics related to the material using the Internet and other sources 5. Active Learning: Group Discussions: Encourage students to ask some factual questions about the topic.

10. Course Structure

Week	Hours	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	5	Understand plant nutrition science and its relationship to soil fertility and fertilization	Introduction to plant nutrition and its importance and division of nutrients and factors affecting absorption	Lectures are theoretical + laboratory experiments	Daily paper-based exam + report writing
2	5	The study of the history of plant nutrition and its relationship to the plant cell	Historical Development of Plant Nutrition Science and Plant Cell Study	Lectures	Daily paper-based exam + report writing
3	5	Increase student's knowledge on how to prepare nutrient solutions	Types of solutions, their characteristics and the method of their preparation	Lectures	Daily paper-based exam + report writing
4	5	Understanding and comprehending students about the proportions of elements in the plant	Nutrient content of the plant	Lectures + Lab	Daily paper-based exam + report writing

5	5	Students' knowledge about the mechanisms and hypotheses that explain the entry of ions of the elements into the plant	Nutrient Absorption and Theories	Lectures	Daily paper-based exam + report writing
6	5	Students' knowledge about the mechanisms and hypotheses that explain the entry of ions of the elements into the plant	Nutrient Absorption and Theories	Lectures	Daily paper-based exam + report writing
7	5	Monthly Exam	Monthly Exam		
8	5	The student's knowledge about the role of each element in the plant and the symptoms of its deficiency and treatment as well as toxicity	Vital activities of nutrients, symptoms of their deficiency and toxicity, and methods of treatment	Lectures + laboratory observations	Daily paper-based exam + report writing
9	5	The student's knowledge about the role of each element in the plant and the symptoms of its deficiency and treatment as well as toxicity	Vital activities of nutrients, symptoms of their deficiency and toxicity, and methods of treatment	Lectures + laboratory observations	Daily paper-based exam + report writing
10	5	The student's knowledge about the role of each element in the plant and the symptoms of its deficiency and treatment as well as toxicity	Vital activities of nutrients, symptoms of their deficiency and toxicity, and methods of treatment	Lectures + laboratory observations	Daily paper-based exam + report writing
11	5	The ability to understand the relationship of water in the absorption of nutrients	The relationship of the plant to water and the role of this relationship in plant nutrition	Lectures	Daily paper-based exam + report writing
12	5	Clarify the role it plays in increasing the quantitative and qualitative quotient	Nutrition of the plant and the quantity of the quotient (the relationship of the plant to the quotient)	Lectures	Daily paper-based exam + report writing
13	5	Clarify the relationship between soil and water salinity and the readiness and absorption of elements Clarify the effect of plant gene expression on its nutrient content and the role of this content in combating various plant diseases	Soil salinity and plant nutrition , plant nutrition and genetics, plant nutrition and plant diseases	Lectures + laboratory observations	Daily paper-based exam + report writing
14	5	Explain to students the importance of paper feeding of the plant and why it is used instead of ground fertilization and what are its disadvantages and the mechanism of penetration of the element to the tissues of the paper and the factors affecting it.	Paper feeding (its importance, disadvantages, mechanism of work and factors affecting it).	Lectures + laboratory observations	Daily paper-based exam + report writing
15	5		Monthly Exam		

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	Applied Plant Nutrition/ Fadel Hussein Al-Sahaf. 1989 plant nutrition Translated by Saadallah Najm Abdullah Al-Nuaimi. University of Al Mosul 1984.
Key References (Sources)	Theoretical and practical plant nutrition (Muzaffar Ahmed Dawood Al-Mousli et al. (2019)
Prevailing books and references that are recommended (scientific journals , reports...)	Barker, A. V., & Pilbeam, D. J. (Eds.). (2015). Handbook of plant nutrition. |||UNTRANSLATED_CONTENT_START|||CRC press.|||UNTRANSLATED_CONTENT_END|||

1. Course Name					
Principles of Garden Design					
2. Course number					
POLG2					
3. Semester / Year:					
Second Semester					
4. Date this description was prepared					
23/4/2024					
5. Available Attendance Forms					
Presences					
6. Number of study hours (total) Number of units (total)					
75 hours / 3.5 hours					
Name of course administrator (if more than one name is mentioned) and email					
Eng. Zainab Nouri Saleh Al-Shaheen zainab.noori@uokerbala.edu.iq					
Course Objectives					
Objectives of the course	**Granting the student a bachelor's degree in the theoretical and practical aspects in order to serve the preparation of a graduate with a prestigious level and go to the practical arena**				
9Teaching and Learning Strategies					
OF THE STRATEGY	**- Providing students with additional basics related to the outputs of thinking and analysis - Forming a fluffy group to discuss the design ideas of the gardens and find alternatives to weak designs in line with the requirements of the user - Asking theoretical questions during lectures, such as(what, how, when and why) Preparing students for homework that requires self-explanations in causal ways**				
10. Course Structure					
Week	**Hours**	**LEARNING OUTCOMES**	**Unit or Topic Name**	**Learning Method**	**Method of Evaluation**
1	5	**Bachelor**	**Introduction to garden design with clarification of concepts and terminology within the jurisdiction ./ Framing the space of the A3 panel with the list of symbols and terminology of the garden**	**Prac THEO.**	**PAPERS**
2	5	**Bachelor**	**Levels of open space designHow to apply the drawing of geometric shapes to the ground (angles , bisection of angles , straight lines**	**Prac THEO.**	**PAPERS**
3	5	**Bachelor**	**The open space design stages are four stages /shapes (square , rectangle , hexagon , pentagon , oval**	**Prac THEO.**	**PAPERS**
4	5	**Bachelor**	**Schematic Criteria for Open Spaces/Curved Lines Drawing Application**	**Prac THEO.**	**PAPERS**

5	5	**Bachelor**	**Rules and principles followed in the design of open space/typical home garden plan (learning to use the scale of drawing, directions and symbols**	**Prac THEO.**	**PAPERS**
6	5	**Bachelor**	**Open Space Design Systems/Zoom Maps**	**Prac THEO.**	**PAPERS**
7	5	**Bachelor**	**Foundations of the uses of plants in the design of open spaces/presentation of some gardens and parks (designed , implemented) through films, pictures and exhibitions of gardens/ selection of a model (garden in the college) and planning with drawing and layout designs in the form of a plan (two-dimensional plan 2D)**	**Prac THEO.**	**PAPERS**
8	5	**Bachelor**	**Formats for Open Spaces /Computer Design Program Study Broad Band V. 2003**	**Prac THEO.**	**PAPERS**
9	5	**Bachelor**	**Types of open spaces - inside and outside cities (spaces of residential complexes, median islands and squares) /Presentation of activities and designs of students (exhibition of garden design and layout**	**Prac THEO.**	**PAPERS**
10	5	**Bachelor**	**Spaces open to the streets of the city (sides of roads , in front of buildings , banks of rivers ..... Etc.)/Framing the space of the A3 panel with the list of symbols and terminology of the garden**	**Prac THEO.**	**PAPERS**
11	5	**Bachelor**	**Open spaces with special specifications (such as factories, laboratories, hospitals .....etc.) /How to apply the drawing of geometric shapes to the ground (angles , bisecting angles , straight lines**	**Prac THEO.**	**PAPERS**
12	5	**Bachelor**	**Green belts (around public roads and surrounding cities)/Shapes (square , rectangle , hexagon , pentagon , oval)/ Application of curved lines drawing**	**Prac THEO.**	**PAPERS**
13	5	**Bachelor**	**Cost calculations (design , implementation , maintenance , maintenance) for open spaces**	**Prac THEO.**	**PAPERS**
14	5	**Bachelor**	**Natural and physical components of open spaces**	**Prac THEO.**	**PAPERS**
15	5	**Bachelor**	**Introduction to garden design with clarification of concepts and terminology within the jurisdiction**	**Prac THEO.**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	Garden Engineering and Design: Talif Chalabi, Talal Mahmoud. (1990) Department of Horticulture - Faculty of Agriculture and Forestry. - First editions. Ministry of Higher Education and Scientific Research University of Mosul Dar Al-Hikma Press for Printing and Publishing. Iraq
Key References (Sources)	Flowers, ornamental plants, design and landscaping: Written by Tariq Al-Qulaie Mustafa Badr, Muhammad Baton, Muhammad Haykal, Alamuddin Nour and Mustafa Raslan. (1998). Faculty of Agriculture. Alexandria University Dar Fajr Al-Islam for Printing and Publishing. The Arab Republic of Egypt. .
Prevailing books and references that are recommended (scientific journals , reports....)	**Scientific journals in basic and veterinary specialties**
Electronic references, websites	**Specialized websites**

1. Course Name					
Plant Inheritance					
2. Course number					
GETE304					
3. Semester / Year:					
Second Semester 2023-2024					
4. Date this description was prepared					
25/2/2024					
5. Available Attendance Forms					
Presences					
6. Number of study hours (total) Number of units (total)					
75 hours , 3.5 units					
Name of course administrator (if more than one name is mentioned)					
Name: Dr. Saleh Abdul Wahid Email: saleh.abdalwahed@uokerbala.edu.iq					
Course Objectives					
Objectives of the course	**It aims to introduce the student to plant genetics and its various branches and to the basic principles of plant genetics in terms of phenotype and internal structure and the most important environmental factors affecting this. The student also understands the procedures of modern methods in genetics, such as the use of biotechnologies and genetic engineering.**				
9Teaching and Learning Strategies					
OF THE STRATEGY	**1. Use visual educational tools such as diagrams and 3D models to illustrate genetic inheritance processes in plants. 2. Learn through interactive presentations and workshops to encourage active participation and deep understanding of plant genetics concepts. 3. Use technology to study changes in plant physiology and genetics.**				
10. Course Structure					
Week	**Hours**	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	**2 Theoretical 3 Practical**	**Identifying the number used in genetic studies and laboratory devices, studying the structure of the cell**	**Introduction to Genetics and its Relationship to Other Sciences**	**Lectures**	**Paper-based daily exam**
2	**2 Theoretical 3 Practical**	**Identifying the number used in genetic studies and laboratory devices, studying the structure of the cell**	**Nature of DNA and RNA**	**Lectures**	**Paper-based daily exam**
3	**2 Theoretical 3 Practical**	**Identifying the number used in genetic studies and laboratory devices, studying the structure of the cell**	**Evidence that DNA is the genetic material**	**Exercises**	**Problem solving**
4	**2 Theoretical 3 Practical**	**Mitosis and meiosis to form quanta, generational succession and double fertilization**	**Doubling of the genetic material**	**Exercises**	**Problem solving**

5	**2 Theoretical 3 Practical**	**Mitosis and meiosis to form quanta, generational succession and double fertilization**	**Chromosome Structure**	**Exercises**	**Problem solving**
6	**2 Theoretical 3 Practical**	**Mitosis and meiosis to form quanta, generational succession and double fertilization**	**Genetic Correlation and Transmission**	**Exercises**	**Problem solving**
7	**2 Theoretical 3 Practical**	**Mendelian inheritance , Mendel's first law, Mendel's second law**	**Genetic Correlation and Transmission**		
8	**2 Theoretical 3 Practical**	**Mendelian inheritance , Mendel's first law, Mendel's second law**	**New Federations**	**Exercises**	**Problem solving**
9	**2 Theoretical 3 Practical**	**Solve exercises on Mendel's law and its impact**	**Genetic mapping**	**Exercises**	**Problem solving**
10	**2 Theoretical 3 Practical**	**Solve exercises on Mendel's law and its impact**	**Types of Mutations**	**Exercises**	**Problem solving**
11	**2 Theoretical 3 Practical**	**Deviations from Mendel's law**	**The mutation and its types**	**Exercises**	**Problem solving**
12	**2 Theoretical 3 Practical**	**Deviations from Mendel's law**	**Cytoplasmic Inheritance**	**Exercises**	**Problem solving**
13	**2 Theoretical 3 Practical**	**Sex-linked traits and sex-specific traits in plants**	**Gene expression, protein synthesis and types of RNA**	**Exercises**	**Problem solving**
14	**2 Theoretical 3 Practical**	**Sex-linked traits and sex-specific traits in plants**	**Gene expression, protein synthesis and types of RNA**	**Exercises**	**Problem solving**
15	**2 Theoretical 3 Practical**	**Sex-linked traits and sex-specific traits in plants**	**Genetic engineering**		

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	Fundamentals of Genetics / Written by Dr. Adnan Hassan Mohammed Al-Athari and the Book of Genetics / Written by Dr. Abdul Latif Falih, Dr. Abdul Razzaq Abdul Hamid and Dr. Haitham Jassim Mohammed Al-Ani
Key References (Sources)	
Prevailing books and references that are recommended (scientific journals , reports...)	
Electronic References, Websites	

1. Course Name	
Applications in Computer 4	
2. Course number	
UO2	
3. Semester / Year:	
Second Semester / 2023-2023	
4. Date this description was prepared	
2023/10/25	
5. Available Attendance Forms	
Presences	
6. Number of study hours (total) Number of units (total)	
30 hours/ 2 units	
Name of course administrator (if more than one name is mentioned)	
Name: Eng. Rabab Hadi Abboud Email: RABAB.H @uokerbala.edu.iq	
Course Objectives	
Objectives of the course	**1. Create and draw a basic 2D drawing in AutoCAD and its usage in planning and designing** **Prepare technical drawings with AutoCAD utilizing the tools of Draw, Modify, and Dimension toolbars**
9Teaching and Learning Strategies	
OF THE STRATEGY	**Lecture** **Classwork •** **Homework •** **Reading books •** **Video lectures**

10. Course Structure

Week	Hours	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
The first	**2 Hours**	**Bachelor**	**Introduction about computer and AutoCAD** **Component of AutoCAD screen** **Title bar , Menu bar , Tool bar , properties**	**Hands-on**	**Daily Exam**
Second	**2 Hours**	**Bachelor**	Make a new drawing , Unite , boundary of paper, ,Command line	**Hands-on**	**Daily Exam**

third	**2 Hours**	**Bachelor**	Draw **Line, Line with angle**	**Hands-on**	**Daily Exam**
Fourth	**2 Hours**	**Bachelor**	, Ellipse, Text	**Hands-on**	**Daily Exam**
Five	**2 Hours**	**Bachelor**	**Modify** **Erase, offset, copy, Rotate , Array , Trim , Extend, Mirror, Move, Explode, Fillet, Chamfer**	**Hands-on**	**Daily Exam**
Six	**2 Hours**	**Bachelor**	**Object snap, Polar tracking**	**Practical**	**Daily Exam**
Seven	**2 Hours**	**Bachelor**	**Dimensions**	**Practical**	**Daily Exam**
The eighth	**2 Hours**	**Bachelor**	**Rectangle, polygon**	**Practical**	**Daily Exam**
Nine	**2 Hours**	**Bachelor**	**Hatch.**	**Practical**	**Daily Exam**
Ten	**2 Hours**	**Bachelor**	**circle, arc**	**Hands-on**	**Daily Exam**
Eleven	**2 Hours**	**Bachelor**	**Printed how**	**Hands-on**	**Daily Exam**
Twelve	**2 Hours**	**Bachelor**	**How save image and export**	**Hands-on**	**Daily Exam**
Thirteenth	**2 Hours**	**Bachelor**	**Draw dount**	**Hands-on**	**Daily Exam**
Fourteenth	**2 Hours**	**Bachelor**	**review**	**Hands-on**	**Daily Exam**
15	**2 Hours**	**Bachelor**	**Draw dount**	**Hands-on**	**Daily Exam**

11. Course Evaluation	
Practical Quarterly Tests 45% – Practical Daily Tests (5%) – Practical Final Test 50%	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	**Textbooks for each course**
Key References (Sources)	**-**
Prevailing books and references that are recommended (scientific journals , reports...)	**-**
Electronic References, Websites	**All websites for learning AutoCAD**

1. Course Name	
Freedom and Democracy	
2. Course number	
U211	
3. Semester / Year:	
Second Semester 2023-2023	
4. Date this description was prepared	
20/4/2024	
5. Available attendance forms	
Presences	
6. Number of Credit Hours (Total) / Number of Units (Total)	
15 hours/ 2 unit	
7. Course administrator's name (mention all, if more than one name	
Name:Prof.Dr. Khudair Yassin Al-Ghanmi **Email : kudir.yassen@uokerbala.edu.iq**	
8. Course Objectives	
Objectives of the course :	• **Creating a student generation capable of understanding and applying these vocabulary correctly** • **Students gain experience, skill and ability to deal with and analyze data** • **Creating a base of information capable of dealing with the data and principles of rights and the foundations of the democratic system.** • **Establishing a huge amount of information and a knowledge base capable of making decisions and communicating effectively with the community.**
9. Teaching and learning strategies	
OF THE STRATEGY	• **Active Learning** **Through listing examples for each item of the approved curriculum and leaving the field for students to think critically, think creatively, research and explore in the academic and community environment and compare them in the reality that currently exists.** • **Using and comparing examples and studies of a realistic case of democratic systems and their foundations, the system of rights and freedoms, and the existing international law to illustrate the historical development of the vocabulary of the material.** • **Brainstorming strategies and focusing on putting the student's mind in a state of readiness and anticipation; to generate the largest number of automatic ideas about the vocabulary subject of the lesson and identify the problem or violate reality in order to solve it, after sifting these ideas and selecting the best among them.** • **E-learning resources: Providing e-learning resources, such as videos and reports issued by the United Nations human rights organizations and Democracy International** • **Group discussions by giving and encouraging students to discuss the concepts contained in each vocabulary of the material and bring them back together.** • **Ongoing Evaluation:** • **Assignments and Quizzes: Assess students' understanding of concepts and substance through assignments and quizzes.** • **Focus on the relationship between human rights and a stable democratic system as an interdependent existing dialectic that exists together.**

10. Course Structure					
Week	**Hours**	**Intended Learning Outcomes**	**Unit or Topic Name**	**Learning method**	**Valuation Method**
1	**2**	**Understand the basic principles Preamble/Conceptualization**	Introduction and definition of the process	Lectures	Paper-based daily exam
2	**2**	**Historical overview - Learn about the most important basic principles in the vocabulary of human rights\ and why human rights and democracy**	Principles of Human Rights and Democracy	Lectures	Direct oral questions for each student
3	**2**	**Providing students with the scientific ability to understand the subject**	The relationship between democracy and human rights. Objectives of the two elements	====	======
4	**2**	**Introducing the nature of the right and the importance of studying human rights**	The relationship between human rights and some modern elements of the phenomenon of information progress - 1 Thephenomenon of globalization,and human rights	=====	====
5	**2**	**Students' knowledge of those vocabulary**	- Learning Reforms and 3-Promotion and the Idea of Human Rights/4- The phenomenon of corruption and its impact on human rights	Do this as a household or family.	=====
6	**2**	**Students' understanding of principles in international laws governing human rights and democracy**	International Bill of Human Rights Universal Declaration of Human Rights	====	Paper-based daily exam
7	**2**	**Monthly Exam**	Monthly Exam		
8	**2**	**Students' understanding of principles in international laws governing human rights and democracy**	Other international declarations and covenants 1. International Covenants on Economic, Social and Cultural Rights Elements of human rights under international charters and declarations 1-Civilrights-2-3	=====	======

9	**2**	**General History Introduction and Definition**	Part Two Democracy/Definition and Types Democracy in the Ancient Age/Direct Democracy types of democracies, Semi-direct democracy, representative democracy, consensual and social	====	Oral questions and answers from students by specifying the name
10	**2**	**Providing students with the scientific ability to understand the material in its unit step by step**	Means of transferring power democratically General and restricted elections Democratic government\Difference between government and state\Means of transfer of power	======	Oral questions and answers from students by specifying the name
11	**2**	========	Election systems, direct voting /direct election, indirect election/individual voting and list voting system	=====	=======
12	**2**	======	One of the manifestations of democratic systems/political parties is their definition, types and relationship to political parties. Human Rights and Democratic Principles	=====	======
13	**2**		Advantages and disadvantages of democratic systems - Means of influencing the democratic system and decision 1- The pressure group Corruption	=====	======
14	**2**	**General Revision**	General Revision	====	approximation.
15	**2**		Monthly Exam	====	

11. Course Evaluation	
Theoretical Quarterly Tests (40%) – Daily Oral and Paper Tests and Questions (10%) The Theoretical Final Test (50%).	
Learning and Teaching Resources	
Required textbooks (methodology if any)	Entry Book in the Study of Democracy and Public Freedoms/ Prof.Dr. Khudair Yassin, Baghdad,Obelisk for Printing:2022
Key References (Sources)	The French Constitution - the Declaration of Human Rights above - the publisher of the French Department of Communication and Information, the French Ministry of Foreign Affairs, p. 6 *sciences*. CRC Press, 2018.

Recommended books and references (scientific journals,reports ,.....))	Charter of the United Nations 1945
	2- Universal Declaration of Human Rights 1948
	3. International Covenant on Human Rights 1966
	4. European Charter of Human Rights 1953
	Charter of the International Criminal Court – Rome 1998
	7- Manual on Human Rights and Elections issued by the Center for Human Rights - United Nations 1994 New York and Geneva 199494-15.
	8- 9-Human Rights, article puplishedlin - Http;//www.iep.utm/h hamns.htm
	9- Alfred sauvy, LopinionPubligue Universritaires De France ,Prance , 1958 p99
	10. Aristote-La poltique-Editions Gonthier. Paris , 1964,p178

Electronic References, Websites	-talebawad@muwatin.org

1. Course Name	
Biochemistry	
2. Course number	
BICH2	
3. Semester / Year:	
Second Semester	
4. Date this description was prepared	
25/10/2023	
5. Available Attendance Forms	
Presences	
6. Number of study hours (total) Number of units (total)	
75 hours / 3.5 unite	
7. Name of course administrator (if more than one name is mentioned) and email	
أ. Dr. Manal Abdul Wahid manal.abd_aiwahwd@uokerbala	
8. Course Objectives	
Objectives of the course	The student learns about the most important procedures andrules to be followed in the laboratory 2. The student should identify important chemical compounds in the body of the organism such as carbohydrates 3. The student should identify important chemical compounds in the body of the organism such as fat 4. The student should identify important chemical compounds in the body of the organism such as protein 5. The student should recognize vehicles Important chemical in the body of the organism such as enzymes and coenzymes
9. Teaching and Learning Strategies	
OF THE STRATEGY	**How to deliver the lecture in person and electronically** **2. Using explanatory means such as whiteboard and smart screen** **3. Using some interactive chemistry programs such as Chem Draw** 4. Using the method of discussion and cooperative teaching.

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	teaching method	Valuation Method
1	3 hours	Chemical Laboratory Safety Rules	Life Chemistry	Presences	Oral evaluation and editing during the lecture through questions and answers
2	3 hours	General Detection of Sugars – Mulch Detection	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
3	3 hours	Polysaccharide Detection – Iodine Detection	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
4	3 hours	Revealing the Reduction Characteristic of Reduced Sugars – Benedict Reveal	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
5	3 hours	Benedict's statement	**Life Chemistry**		Assess the student's level of understanding
6	3 hours	Parvoid Detection , Picric Acid Detection, Starch Iodine Detection	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
7	3 hours	Disclosure of Unknown Sugar	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
8	3 hours	Acrolein Detection , Copper Acetate Detection	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
9	3 hours	Iodine assay, acidity number	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
10	3 hours	Iodine number, saponification number	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
11	3 hours	Biorite Detection, Xanthophane Detection	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
12	3 hours	Mellon's revelation, Rosenheim's revelation	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
13	3 hours	Sakakoshi's revelation	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
14	3 hours	Microcladal Method of Protein Estimation	**Life Chemistry**		Oral evaluation and editing during the lecture through questions and answers
15	3 hours	Estimation of alpha-amylase enzyme	**Life Chemistry**		Assess the student's level of understanding

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	Foundations of Analytical Chemistry Dr. Moayad Qasim Al-Abbaji
Key References (Sources)	**Skoog and West's Fundamentals of Analytical Chemistry: Cengage Technology Edition 2022**
Prevailing books and references that are recommended (scientific journals , reports....)	1- Journal Analytical Chemistry Analytica Chimica Acta
Electronic references, websites	**Google scholar , Research get , ACs**

1. Course Name
Microbiology
2. Course number
MICR2
3. Semester / Year:
Second Semester
4. Date this description was prepared
23/4/2024
5. Available Attendance Forms
Presences
6. Number of study hours (total) Number of units (total)
75 hours / 3.5 unite
Name of course administrator (if more than one name is mentioned) and email
Prof. Dr. Zainab Aliwi Mohamed Zainab.mohammed@uokerbala.edu.iq
Course Objectives

Objectives of the course	**1-Determinesthe characteristics of microorganisms** **2- Learn about the factors that affect the growth of microorganisms** **3-Types of microorganisms, their description and characteristics**
9Teaching and Learning Strategies	
OF THE STRATEGY	**1- Displaying educational videos for the student** **2- Work with the mukhtar and conduct experiments** **3-Means of clarification such as PowerPoint** **4- Explanation by the teacher and video recording of the lecture**

10. 10. Course Structure

Week	Hours	LEARNING OUTCOMES	Unit or Topic Name	Learning Method	Method of Evaluation
1	5	Introduction of Microbiology& Safety in Laboratory	Introduction of Microbiology Lab 1: Safety in Laboratory	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Questions for discussion Oral exams Reporting
2	5	Classification of microbes & Sterilization and Disinfection	Classification of microbes Lab 2: Sterilization and Disinfection	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Questions for Discussion
3	5	Different Size, Shape and Arrangement of Bacterial Cells& Staining bacteria	Different Size, Shape and Arrangement of Bacterial Cells Lab3:Staining bacteria: simple stain technique	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Oral exams
4	5	Bacterial cell structure& Gram stain	Bacterial cell structure Lab4: Gram stain	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Reporting
5	5	Microbial Nutrition and Culture of bacteria& Wet slide, using wet mount to observe fungi	Microbial Nutrition and Culture of bacteria Lab 5: Wet slide, using wet mount to observe fungi	Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques	Questions for discussion

6	**5**	**Bacterial growth & Medial preparation**	**Bacterial growth Lab 6: Medial preparation**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Oral exams**
7	**5**	**bacterial genetic& Isolation bacteria from environment**	**bacterial genetic Lab 7:Isolation bacteria from environment**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Reporting**
8	**5**	**General properties of viruses & Interpretation the results and colony diagnosis**	**General properties of viruses Lab 8:Interpretation the results and colony diagnosis**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Questions for discussion**
9	**5**	**Group RNA and DNA virus& Fungi culture and identification**	**Group RNA and DNA virus Lab 9:Fungi culture and identification**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Oral exams**
10	**5**	**Fungi structure and classification & Protozoa Helminthes Control of microorganisms**	**Fungi structure and classification Lab 10:Protozoa Helminthes Control of microorganisms**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Reports**
11	**5**	**Control**	**Control**	**Using PowerPoint and educational videos while working in laboratories to acquire skills and techniques**	**Questions for Discussion**
15			**General Revision**		

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12. Learning and Teaching Resources	
Required textbooks (methodology if any)	-Prescott, H. (2003).Laboratory Exercises in Microbiology. Fifth ed. The McGraw-Hill Companies. - Abdelraouf A. Elmanama (2009). General Microbiology Manual Medical Technology Department. Islamic University-Gaza.
Key References (Sources)	Prescott, H. (2003).Laboratory Exercises in Microbiology. Fifth ed. The McGraw-Hill Companies. -Stuart Hogg (2005). Essential Microbiology. John Wiley & Sons. The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England. - Eby Bassiri (2010).Microbiology bio 275 course. - Abdelraouf A. Elmanama (2009). General Microbiology Manual Medical Technology Department. Islamic University-Gaza.

	- Espinel-Ingroff, A, McGinnis, MR, Pincus, DH, Goldson, PR, Kerkering, TM(1989). Evaluation of the API 20c yeast identification system for the differentiation of some dematiaceous fungi. |||UNTRANSLATED_CONTENT_START|||J. Clin. |||UNTRANSLATED_CONTENT_END|||Microbiol. 27:2565-2569,. - McGinnis, MR, Borelli, D, Padhye, AA, Ajello, L. (1986) Reclassification of *Cladosporium bantianum* in the genus *Xylohypha*. |||UNTRANSLATED_CONTENT_START|||J. Clin. |||UNTRANSLATED_CONTENT_END|||Microbiol. 23:1148-1151,. -McGinnis, MR, Rinaldi, MG, Winn, R, (1986).Emerging agents of phaeohyphomycosis: pathogenic species of *Bipolaris* and *Exserohilum*. |||UNTRANSLATED_CONTENT_START|||- J. Clin. |||UNTRANSLATED_CONTENT_END|||Microbiol. 24:250-259,. Salkin, IF, McGinnis, MR, Dykstra, MJ, Rinaldi, MG(1988) *Scedosporium inflatum*, an emerging pathogen. |||UNTRANSLATED_CONTENT_START|||J. Clin. |||UNTRANSLATED_CONTENT_END|||Microbiol. 26:498-503,. Harvey R. A., Champe P. C., Fisher B. D. (2006) Lippincotts illustrated reviews; Microbiology 2nd edition. **Sharma S. and Dilbaghi N. (2006). Microbial World, History and Development of Microbiology, Scope of Microbiology.** **|||UNTRANSLATED_CONTENT_START|||Retrieved from.|||UNTRANSLATED_CONTENT_END|||**
Prevailing books and references that are recommended (scientific journals , reports....)	Prescott, H. (2003).Laboratory Exercises in Microbiology. Fifth ed. The McGraw-Hill Companies. - Abdelraouf A. Elmanama (2009). General Microbiology Manual Medical Technology Department. Islamic University-Gaza
Electronic references, websites	https://pdfs.semanticscholar.org/18a2/219e76b6712c3776e9d56561b037b6b70a88.pdf

Phase III decisions

1. Course Name
Basics of Deciduous Fruit 1
1. Decision symbol
DFPR3
1. Available forms of attendance
It's mandatory.
2. Chapter/year
Chapter I 2023
3. Number of school hours (total)
75hours;3.5 unite
4. Date of preparation of this description
20/9/2023
5. Name of curriculum official (if more than one name) and e-mail
م.Harath Mahmoud Aziz **https://classroom.google.com/c/MTUyMzU2OTcyNjQ4?cjc=kobwuxf**
6. Objectives of the decision
- To inform students of the types of fruit and to divide them according to their areas of distribution, environmental requirements, type of fruits and plant families; **- To introduce students to the differences between green fruit and silver fruit (leaf of leaves).** **- Informing students of the environmental requirements for the successful cultivation of various types and types of silver fruit;** **- The definition of the importance of trimming and breeding of vegetative fruit, the nature of pregnancy, flowering and the types of fruit-growing curves;** **- Introduction of students to various types of pollination and fertilization in different fruit types** **Informing students of the importance of irrigation, composting and various agricultural processes in the growth and production of fruit.** **- To introduce students to the stages of growth of fruits and times suitable for the collection of each type, depending on the purpose of their use.**

9. Education and learning strategies	
Strategy	Providing students with additional basics for thinking and analysis outputs Creation of a fascist group to discuss various agricultural topics Asking thought questions during lectures includes "What, how, when and why". Preparation of homework for students requires self-explaining in causal ways

10. Course Structure					
Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
1	5	Identify the types of fruit crops and their divisions	growing crops?	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
2	5	Knowing the importance of the availability of low temperatures in winter for the success of fruit cultivation	Develop stillness and comfort in fruit	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
3	5	Knowing the appropriate environmental conditions to give a good result	Climatic requirements of fruit plants	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
4	5	Knowing the appropriate environmental conditions to give a good result	Complementing climate requirements	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
5	5	Distinguish between types of flowers and types of pollination in fruits	Flowering in deciduous fruit	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
6	5	Identify the types of flower buds and the nature of the load in the fruit	The flower buds of fruit trees and the factors affecting their formation	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
7	5	Knowledge of compatibility and incompatibility in pollination and means of pollination of fruit plants	Vaccination, its types and means	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
8	5	Knowing how to obtain double fertilization and virgin fruiting	Fertilization and fruit knots	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
9	5	Identify the types of flower and fruit loss	Fruiting and flowering	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
10	5	Identify the causes of the occurrence of virgin fruiting and how to produce it industrially	The virgin fruit and its types .	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
11	5	Types of fruit plant breeding and when to use each	Pruning breeding for fruit trees.	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
12	5	Pruning trees according to the nature of their carrying and renewing old trees	Fruiting and regeneration pruning	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports

13	5	The importance of fertilization and the types of fertilizers necessary for each stage of plant growth	composting	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
14	5	Identify the growth curves of each group of fruits to know when and what types of fertilizers are added to each stage	Stages of fruit growth and types of growth curves	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports
15	5	Introducing the student to the reasons for resorting to multiple vaccination and installation in the fruit	Vaccination and installation of fruit trees and selection of appropriate assets	Lecture, Discussion ,Reports, Labs , Fieldwork	Quick and Monthly PAPERS, Class Activity and Reports

Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
1- Required textbooks	Fruit deciduous leaves / Dr. Alaa Abdul Razzaq Al-Jumaili , Majed Abdul Wahab Ahmed Abu Al-Saad
Key References (Sources)	Fruit falling leaves – cultivation – care and production / Prof.Dr. Atef Mohammed Ibrahim
A) Recommended books and references (scientific journals, reports, etc(.	- **Fruit production for non-specialized departments in gardening / d. Ali Al-Douri , Dr. Adel Al-Rawi** - Fruit and vegetable production/ Dr. Makki Alwan Al-Khafaji , Dr. Faisal Abdulhadi Al-Mukhtar
b) Electronic references, Internet sites...,	Fruit deciduous leaves / Dr. Alaa Abdul Razzaq Al-Jumaili , Majed Abdul Wahab Ahmed Abu Al-Saad

1. Course Name:
Irrigation and Drainage
2. Course Code:
IRDR3
3. Semester / Year:
Second semester / 2023 - 2024
4. Description Preparation Date:
20/9/2023
5. Available attendance forms
Attending the classroom / the university's electronic system / working in a group with students on Telegram
6. Number of Credit Hours (Total) / Number of Units (Total)
2theoretical hours + 3 practical hours (weekly) / number of units (3.5 units)
Name of the course administrator (if more than one name is mentioned)
Name:Prof. Dr. Sabar Rahi Jassim **Email : Sabbar.aljeboory@uokerbala.edu.iq** Prof. Nour Ahmed Nouri Noor.ahmed@uokerbala.edu.iq
8. Course objectives

Objectives of the course :	The course aims to teach students how to make a contour map of a specific area, determine the locations of irrigation and puncture channels, calculate the drilling cubes necessary to establish them, know how to extract water losses, the laws and equations of extracting water consumption, and how to find the distance between field trocars according to the soil texture
9. Teaching and learning strategies	
OF THE STRATEGY	• **Auditory methods (teaching explanation of the topic)** • **Copy the writing on the board.** • **The method of direct dialogue between the teacher and the student with the evaluation of the student in the classroom participation** • Finding solutions to the problems and obstacles that students encounter in the practical and theoretical part of the subject

10 . Structure of the decision

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	**2 theoretical 3Practical**	Rey and Puzzle	**An overview of the science and reasons for irrigation that led to the emergence of the operating system (theoretical) + the devices and tools used to purify the land (practical)**	**In-person and electronic Using PowerPoint and educational videos with laboratory work to**	• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**

2	**2 theoretical 3Practical**	Rey and Puzzle	**Main and secondary irrigation water sources (theoretical) + land survey and drawing a contour map (practical)**	**acquire skills and techniques Scientific trips for irrigation and drainage projects in the region**	• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
3	**2 theoretical 3Practical**	Rey and Puzzle	**The foundations of planning the irrigation schedule network (theoretical) + determining the irrigation and drainage network for the agricultural area (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
4	**2 theoretical 3Practical**	Rey and Puzzle	**Calculating the ideal section of the table (theoretical)+ Methods for measuring soil moisture content (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
5	**2 theoretical 3Practical**	Rey and Puzzle	**Water consumption and methods of measuring it (theoretical)+ Methods for measuring irrigation water (1) (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
6	**2 theoretical 3Practical**	Rey and Puzzle	**Lining irrigation canals (theoretical)+ Methods for measuring irrigation water (2) (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**

7	**2 theoretical 3Practical**	Rey and Puzzle	**Water pumping and machines used (theoretical)+ Water rationing and water consumption (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
8	**2 theoretical 3Practical**	Rey and Puzzle	**Calculating the horsepower of the pump (theoretical)+ Laws for finding water consumption (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
9	**2 theoretical 3Practical**	Rey and Puzzle	**Irrigation water quality and classification systems (theoretical)+ Practical drainage of irrigated lands**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
10	**2 theoretical 3Practical**	Rey and Puzzle	**Drilling of irrigated lands (theoretical)+ Open puncture and how to create trocars (Practical)**		• **Questions for discussion** • **Oral PAPERS** • **Daily PAPERS** • **Monthly PAPERS**
11	**2 theoretical 3Practical**	Rey and Puzzle	**Open puncture (theoretical) + Covered puncture and calculating the distance between the trocars (Practical)**		
12	**2 theoretical 3Practical**	Rey and Puzzle	**Covered puncture (theoretical)**		

11. Course evaluation					
Theoretical quarterly tests	Practical quarterly tests	Duties	Attending practical material	Practical final test	The theoretical final exam
%30	%10	%5	%5	%20	%30

12. Learning and teaching resources	
Required textbooks (methodology, if any)	
Main references (references)	Irrigation basics and applications, Dr. Khudair Al-Hadithi / Modern irrigation technologies, Dr. Khudair Al-Hadithi/ Puncture Engineering, Dr. Jamal Sharif Dughramah J
Mainstream recommended books and references (scientific journals, reports....)	Al-Rai, Dr. Muhammad Abdullah Najm Reports, websites
Electronic references, websites	

1. Course name:	
Medicinal and Aromatic Plants	
2. Course Code :	
MAPL3	
3. Semester/Year:	
First semester 2023	
4. The date this description was prepared:	
20/9/2023	
5. Available forms of attendance:	
In-person	
6. Number of study hours (total) Number of units (total):	
75 hours ;3.5 unite	
Name of the course administrator (if more than one name is mentioned) and email	
Prof. Dr. Sabah Abdel Falih **Dr. Asmaa Ali Salman**Asmaa.salman@uokerbala.edu.iq	
Course objectives **Identify medicinal and aromatic plants** **Identify the active ingredients in medicinal and aromatic plants** **Studying the environmental factors affecting the production of medicinal and aromatic plants and their content of active ingredients** **How to identify active compounds in medicinal and aromatic plants**	
Objectives of the study subject	**A1- Enabling students to obtain knowledge and knowledge in the field of medicinal and aromatic plants.** **A2- Introducing the student to medicinal and aromatic plants and their pharmacological importance.** **A3- Introducing the student to the effect of environmental factors on the production of medicinal and aromatic plants.** **A4- Introducing the student to the active ingredients in medicinal and aromatic plants.** **A5- Introducing the student to the importance and biological and industrial uses of active compounds.** **A6- Introducing the student to the most important cultivated medicinal and aromatic plants.**
9. Teaching and learning strategies	
The strategy	**-Providing students with additional basics related to the outcomes of thinking and analysis** **-Forming a national group to discuss various agricultural topics** **-Asking thinking questions during lectures, including (what, how, when, and why)** **Preparing students for homework that requires self-explanation in causal ways**

10. Structure of the decision

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method

the first	**5hours**	**Bachelor**	**Introduction to medicinal and aromatic plants, genera and families that include medicinal plants**	Prac THEO.	**PAPERS**
the second	**5hours**	**Bachelor**	**Geographical distribution of medicinal and aromatic plants, methods of storing medicinal plants**	Prac THEO.	**PAPERS**
the third	**5hours**	**Bachelor**	**Division of medicinal and aromatic plants, methods of extracting medically active substances**	Prac THEO.	**PAPERS**
the fourth	**5hours**	**Bachelor**	**Chemical division of medicinal plants, plant parts that contain medically active substances**	Prac THEO.	**PAPERS**
Fifth	**5hours**	**Bachelor**	**Methods of adulteration in medicinal plants, extraction of medicinal and aromatic oils**	Prac THEO.	**PAPERS**
sixth	**5hours**	**Bachelor**	**Corruption of medicinal and aromatic plants, marketing of medicinal plants**	Prac THEO.	**PAPERS**
Seventh	**5hours**	**Bachelor**	**Arak, extraction with organic solvents**	Prac THEO.	**PAPERS**
eighth	**5hours**	**Bachelor**	**The first monthly exam**	Prac THEO.	**PAPERS**
Ninth	**5hours**	**Bachelor**	**Jojoba, preparation of medicinal preparations from medicinal plants**	Prac THEO.	**PAPERS**
The tenth	**5hours**	**Bachelor**	**Evening primrose, classification of active substances contained in medicinal plants**	Prac THEO.	**PAPERS**
eleventh	**5hours**	**Bachelor**	**Belladonna, botanical description of arak, jojoba and evening primrose**	Prac THEO.	**PAPERS**
twelveth	**5hours**	**Bachelor**	**Saffron and stevia, botanical grade of saffron and saffron plants**	Prac THEO.	**PAPERS**
Thirteenth	**5hours**	**Bachelor**		Prac THEO.	**PAPERS**
fourteenth	**5hours**	**Bachelor**	**The use of marine plants as medicinal plants, botanical description of saffron and stevia**	Prac THEO.	**PAPERS**

Fifteenth	**5hours**	**Bachelor**	**Second month exam**	Prac THEO.	**PAPERS**
the first	**5hours**	**Bachelor**	**Introduction to medicinal and aromatic plants, genera and families that include medicinal plants**	Prac THEO.	**PAPERS**

11. Course evaluation	
Daily exams with discussion questions within the lecture **The degree of participation in questions related to the academic subject** **Specific grades for field assignments and reports**	
12. Learning and teaching resources	
Required textbooks (methodology, if any) The prescribed textbooks for each course	Textbooks for each course
Key References (Sources)	Supporting sources for each course
Recommended books and references (scientific journals,reports ,.....))	Scientific journals in basic and veterinary specialties
Electronic references, websites	Specialized websites

1. Course Name
Design and Analysis of Experiments
2. Course Code:
STED3
3. Semester/year
The first semester(2024-2023)
4. Date this description was prepared
20/9/2023
5. Available attendance forms
Official working hours
6. Number of study hours (total) Number of units (total)
About 75 hours with 3.5 units
Name of the course administrator (if more than one name is mentioned)
Name: M.M. Uday Hamed Taha Email:oday.h@uokerbala.edu.iq

Course objectives	
Objectives of the study subject	• **Students acquire the concepts of designing and analyzing experiments and dealing with them theoretically, appliedly, and practically** • **Students acquire the scientific foundations for designing and analyzing field and laboratory experiments** • **Teaching students how to deal with various designs** • **Providing students with information about correlation and regression**
9. Teaching and learning strategies	
Of The strategy	**Developing the student's ability to work on performing assignments and submitting them on the scheduled date** **Gain experience, skill, and ability to deal with experimental design, data collection, and analysis** **Managing the lecture in an applied manner linked to the reality of daily life to attract the student to the topic of the lesson without straying from the core of the topic so that the material is flexible and capable of being understood and analysed.**

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
The first	5	Theoretical and practical concepts	Revision in Statistics	Theoretical and laboratory	Written and Oral
Second	5	Theoretical and practical concepts	General Concepts in Design	Theoretical and laboratory	Written and Oral

third	5	Theoretical and practical concepts	Analysis of variance	Theoretical and laboratory	Written and Oral
Fourth	5	Theoretical and practical concepts	Testing averages	Theoretical and laboratory	Written and Oral
Five	5	Theoretical and practical concepts	Completely nesting design	Theoretical and laboratory	Written and Oral
Six	5	Theoretical and practical concepts	Monthly Exam	Theoretical and laboratory	Written and Oral
Seven	5	Theoretical and practical concepts	Design of Randomized Whole Sectors	Theoretical and laboratory	Written and Oral
The eighth	5	Theoretical and practical concepts	Latin Square Design	Theoretical and laboratory	Written and Oral
Nine	5	Theoretical and practical concepts	Factor experiments	Theoretical and laboratory	Written and Oral
Ten	5	Theoretical and practical concepts	Splinter board experiments	Theoretical and laboratory	Written and Oral
Eleven	5	Theoretical and practical concepts	Splinter Splitter	Theoretical and laboratory	Written and Oral
Twelve	5	Theoretical and practical concepts	correlation	Theoretical and laboratory	Written and Oral
Thirteenth	5	Theoretical and practical concepts	regression	Theoretical and laboratory	Written and Oral
Fourteenth	5	Theoretical and practical concepts	General Revision	Theoretical and laboratory	Written and Oral
Fifteenth	5	Theoretical and practical concepts	Monthly Exam	Theoretical and laboratory	Written and Oral

Course Evaluation	
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily PAPERS, oral, monthly, written, reports, etc.	
12 Learning and Teaching Resources	
Required textbooks (methodology if any)	**Al-Sahuki Medhat and Karima Muhammad Wahib. 1990. Applications in designing and analyzing experiments. Ministry of Higher Education and Scientific Research, University of Baghdad**.
Key References (Sources)	**Al-Rawi,Khasha Mahmoud and Abdulaziz Muhammad Khalafallah, 1980. Design and analysis of agricultural experimentsMinistry of Higher Education and Scientific ResearchUniversity of Al Mosul** .
Recommended books and references (scientific journals,reports ,.....))	Hamidan Adnan Abbas Matanios Makhoul Farid Jaouni and Ammar Nasser Agha. 2016Applied Statistics.Economics Coll. Damascus University
Electronic References, Websites	**Casler, M.D. (2015). Fundamentals of Experimental Design: Guidelines for Designing Successful Experiments. Agronomy Journal, 107(2), pp. 692-705.**

1. Course Name
Winter Vegetables
2. Course number
POWV3
3. Semester/year
First Semester (2023)
4. Date this description was prepared
20/9/2023
5. Available attendance forms
In-Person
6.Number of study hours (total) Number of units (total)
75 hours;3.5 unite
7.Name of the course administrator (if more than one name is mentioned) and email
Prof. Dr. Khaled Abdel Matar https://classroom.google.com/u/0/c/MTY3MDQzMjkyMTk4
8.Course objectives

Objectives of the course :	**A/1 : Enabling students to obtain knowledge and understanding of the intellectual and applied framework in the science of vegetable production.** **A/2 : Enabling students to obtain knowledge and understanding of the agricultural requirements for vegetable production according to scientific standards** **A/3 Familiarizing students with modern technologies in agriculture through the presentation of films, scientific research and modern methods of agriculture** **A/4 Enabling students to know about the cultivation of summer and winter vegetables in sophisticated greenhouses using food solutions (hydroponics)** **B1-Use of the display screen in classrooms** **B2- Enabling students to visit the library and the Internet** **B3- Display illustrations of various horticultural crops** **B4-Visiting the horticultural stations in the geographical area**

9. Teaching and learning strategies	
OF THE STRATEGY	Providing students with additional basics related to the outputs of thinking and analysis Forming a fluffy group to discuss various agricultural topics Asking reflective questions during lectures, such as(what, how, when and why) Preparing students for homework that requires self-explanations in causal ways

10. Course Structure

Week	Hours	Intended Learning Outcomes	Module / Course Name or	teaching method	Valuation Method
The first	5-hour	Bachelor	Introduction to vegetable crops and problems hindering vegetable production in the world and Iraq	Prac THEO.	PAPERS
Second	5-hour	Bachelor	Methods of classifying vegetable crops and their divisions	Prac THEO.	PAPERS
third	5-hour	Bachelor	Environmental factors including heat, light, humidity, weather and soil factors	Prac THEO.	PAPERS
Fourth	5-hour	Bachelor	Irrigation and Fertilization	Prac THEO.	PAPERS
Five	5-hour	Bachelor	Producing and adapting seedlings	Prac THEO.	PAPERS
Six	5-hour	Bachelor	The study of the vegetables of the Crusader family, including calves, calves, shalgham, radishes, cauliflowers and rashad, in terms of origin, nutritional importance, growth factors, flowers, yield, pests and varieties	Prac THEO.	PAPERS
Seven	5-hour	Bachelor	Studying the vegetables of the Crusader family, including(Ilhanah , Kalam, Shalgham, Radish, Cauliflower and Rashad) in terms of origin, nutritional importance, growth factors, flowers, crop, pests and varieties	Prac THEO.	PAPERS
The eighth	5-hour	Bachelor	Studying vegetables of the leguminous family, including (peas	Prac THEO.	PAPERS
Nine	5-hour	Bachelor	Studying vegetables of the leguminous family, including (peas	Prac THEO.	PAPERS
Ten	5-hour	Bachelor	Narcissism, including(onions, garlic and leeks) and the production of onions and seeds	Prac THEO.	PAPERS
Eleven	5-hour	Bachelor	The vehicle includes(lettuce and diamonds Ramameya, including(beetroot, chard and spinach	Prac THEO.	PAPERS
Twelve	5-hour	Bachelor	The tent includes (carrots, celery, and minerals	Prac THEO.	PAPERS
Thirteenth	5-hour	Bachelor	Studying the most important vegetable crops hoped to spread in Iraq, including broccoli, Brussels sprout, Chinese indignation, kale, artichoke and arugula	Prac THEO.	PAPERS
Fourteenth	5-hour	Bachelor	Studying the most important vegetable crops hoped to spread in Iraq, including broccoli, Brussels sprout, Chinese indignation, kale, artichoke and arugula	Prac THEO.	PAPERS
Fifteenth	5-hour	Bachelor	General Revision	Prac THEO.	PAPERS

11.Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	Textbooks for each course
Key References (Sources)	Resources for each course
Recommended books and references **(**scientific journals,reports ,.....) **)**	Scientific journals in basic and veterinary specialties
Electronic references, websites	Specialized websites

1. Course Name	
Horticultural Plant Pathology	
2. Course Code	
HPPA3	
3. Semester/year	
The first semester 2023	
4. Date this description was prepared	
20/9/2023	
5. Available attendance forms	
Available	
6. Number of study hours (total) Number of units (total)	
2theoretical hours +3 practical hours per week	
7. Name of the course administrator (if more than one name is mentioned) and email	
Prof. Dr. Zainab Aliwi Muhammad Zainab.mohammed@uokerbala.edu.iq	
8. Course objectives	
Objectives of the study subject	**-1Determines the characteristics of horticultural diseases -2Identify the factors that affect the growth of horticultural diseases -3Types of horticultural diseases, their description and the characteristics that characterize them**
9. Teaching and learning strategies	
The strategy	**Measurement method Self-education method Theoretical and video lectures Practical lectures and training students on using laboratory equipment**
11. Course evaluation	
Theoretical semester PAPERS (30%) - Practical quarterly PAPERS (15%) - Practical daily PAPERS (5%) - Practical final exam (20%) - Theoretical final exam(%30)	
12. Learning and teaching resources	
Required textbooks (methodology, if any)	Plant diseases / Hussein Al-Arousi, Samir Mikhail, and Hamid Ali Abdel Moneim
Main references (sources)	Fungi / Dr. Ibrahim Aziz Khaled Al-Shehili, Dr. Qaiser Najib Saleh, Dr. Abdul Latif Salem Ismail
Mainstream recommended books and references (scientific journals, reports....)	Basics of mycology/Abdullah Nasser Abu Haila Arab Plant Protection Journal
Electronic references, websites	https://pdfs.semanticscholar.org/18a2/219e76b6712c3776e9d56561b037b6b70a88.pdf Biological control of plant pathogens, Muhammad Abd Ali

1.Course Name
Ornamental plants 1
2.Course number
ORPL3
3. Semester/year
Second semester
4.Date this description was prepared
20/9/2023
5.Available attendance forms
Compulsory
6.Number of study hours (total) Number of units (total)
75 hours and 3.5 **units**
7.The name of the course administrator (if more than one name is mentioned) and email address: M.M. Abeer Qasim Kazem
Abeer.q@uokerbala.edu.iq
8.Course objectives

Objectives of the course :	**Course Objectives Cognitive Objectives** **1 : Enabling students to obtain knowledge and understanding of the intellectual and applied framework in the science of ornamental plant production** **2 : Enabling students to obtain knowledge and understanding of the agricultural requirements for the production of ornamental plants according to scientific standards** **3; Familiarizing students with modern technologies in agriculture through the presentation of films, scientific research and modern methods of agriculture** 4: Enabling students to know about the cultivation and propagation of seasonal and permanent ornamental plants in sophisticated greenhouses using nutritional solutions (hydroponics

9. Teaching and learning strategies

OF THE STRATEGY	Providing students with additional basics related to the outputs of thinking and analysis Forming a fluffy group to discuss various agricultural topics Asking reflective questions during lectures, such as(what, how, when and why) Preparing students for homework that requires self-explanations in causal ways

10. Course structure

Week	hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	**5**	**Bachelor**	Introduction to ornamental plants and problems hindering ornamental plants in the world and Iraq	**Practical+ theoretical**	**PAPERS**

2	**5**	**Bachelor**	Studying ornamental shrubs, their benefits ,importance and methods of traditionalization.....	**Practical+ theoretical**	**PAPERS**
3	**5**	**Bachelor**	Study of ornamental climbers, common types in Iraq ,care , climbing methods	**Practical+ theoretical**	**PAPERS**
4	**5**	**Bachelor**	Study of hedge plants	**Practical+ theoretical**	**PAPERS**
5	**5**	**Bachelor**	Cacti and succulents ,their adaptation , how to create rock gardens	**Practical+ theoretical**	**PAPERS**
6	**5**	**Bachelor**	Aquatic and semi-aquatic plants and their importance	**Practical+ theoretical**	**PAPERS**
7	**5**	**Bachelor**	Harvest flowers , commercial importance, preservation solutions, flowers , and storage	**Practical+ theoretical**	**PAPERS**
8	**5**	**Bachelor**	**Flower arrangement**	**Practical+ theoretical**	**PAPERS**
9	**5**	**Bachelor**	Miniature gardens,bonsai , glass pond farming	**Practical+ theoretical**	**PAPERS**
10	**5**	**Bachelor**	ornamental herbs,ornamental plants, ornamental plants	**Practical+ theoretical**	**PAPERS**
11	**5**	**Bachelor**	Fertilizing ornamental plants, chemical fertilizers, organic fertilizers,spraying solutions	**Practical+ theoretical**	**PAPERS**
12	**5**	**Bachelor**	Reproduction facilities Nurseries for decorations - wooden shades - greenhouses - greenhouses	**Practical+theoretical**	**PAPERS**
13	**5**	**Bachelor**	Landscaping , methylation, service operations such as cutting , fertilization , irrigation	**Practical+theoretical**	**PAPERS**
14	**5**	**Bachelor**	Landscaping , methylation, service operations such as cutting , fertilizing , irrigation , humping	**Practical+theoretical**	**PAPERS**
15	**5**	**Bachelor**	General Revision	**Practical+theoretical**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12.Learning and Teaching Resources	Learning and Teaching Resources
Required textbooks (methodology if any)	Required textbooks (methodology if any)
Key References (Sources)	Key References (Sources)
Recommended books and references **(**scientific journals,reports ,.....) **)**	Recommended books and references **(**scientific journals,reports ,.....) **)**
Electronic references, websites	Electronic references, websites

1.Course Name
: summer vegetables
2.Course Code
POSV3
3. Semester/year
Semester II
4.Date this description was prepared
2024\4\24
5.Available attendance forms
In-Person
6.Number of study hours (total) Number of units (total)
75 hours 3.5 units
7.The name of the course administrator (if more than one name is mentioned) and email: Khaled Abd Matar Hassan Al-Lami
Khalid.mutar@uokerbala.edu.iq
8.Course objectives

Objectives of the study subject	**Learn about the methods of growing and producing vegetable crops belonging to summer vegetable families**

9. Teaching and learning strategies	
OF THE STRATEGY	**How to give lectures** **- Using the method of dialogue and discussion with students to deliver theoretical information to the student .** **Theory lesson.** **- Using projectors during lectures .** - Assigning homework to students, preparing scientific reports on the specialization

10. Course structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	**5**	**Bachelor**	Studying the crops of the eggplant family - tomato plant: It is studied in terms of origin and environmental needs	Prac THEO.	PAPERS
2	**5**	**Bachelor**	Stages of growth, fertilization, harvesting and varieties in tomatoes	Prac THEO.	T
3	**5**	**Bachelor**	Potato plant - It is studied in terms of origin and environmental needs according to the stages of growth, fertilization, harvesting and varieties	Prac THEO.	T
4	**5**	**Bachelor**	Aubergine Family : Aubergines – Peppers	Prac THEO.	T

5	**5**	**Bachelor**	Cucurbit family : Khayyar	Prac THEO.	T
6	**5**	**Bachelor**	Month ONE		T
7	**5**	**Bachelor**	Pumpkin Family:DuckYacht	Prac THEO.	T
8	**5**	**Bachelor**	The Gourd Family:Al-Raqi – Gourd of Zucchini	Prac THEO.	T
9	**5**	**Bachelor**	Pumpkin Family:Pumpkin – Anaki Pumpkin – Cucumber Cucumber	Prac THEO.	T
10	**5**	**Bachelor**	Legume Family: Beans – Lobby	Prac THEO.	T
11	**5**	**Bachelor**	The marshmallow family:Al-Bami	Prac THEO.	T
12	**5**	**Bachelor**	A scientific trip to a vegetable production farm	Prac THEO.	T
13	**5**	**Bachelor**	The Alika family: sweet potatoes	Prac THEO.	T
14	**5**	**Bachelor**	Second month	Prac THEO.	T
15					

Course Evaluation **Theoretical Quarterly Tests (25%) – Practical Quarterly Tests (10%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (40%)**	
Required textbooks (methodology if any)	Al-Khader Production Dr. Fakher Ibrahim Al-Rikabi and Dr.Jabar, Abdul
Key References (Sources)	
Recommended books and references (scientific journals,reports ,.....) **)**	
Electronic references, websites	

1.Course Name
Ornamental plants 2
1. 2.Course number
ORPL3
2. 3. Semester/year
Second semester
3. 4.Date this description was prepared
23/4/2024
5.Available attendance forms
Compulsory
4. 6.Number of study hours (total) Number of units (total)
75 hours and 3.5 **units**
The name of the course administrator (if more than one name is mentioned) and email address: M.M. Abeer Qasim Kazem
Abeer.q@uokerbala.edu.iq
Course objectives

Objectives of the course :	**Course Objectives Cognitive Objectives** **1 : Enabling students to obtain knowledge and understanding of the intellectual and applied framework in the science of ornamental plant production** **2 : Enabling students to obtain knowledge and understanding of the agricultural requirements for the production of ornamental plants according to scientific standards** **3; Familiarizing students with modern technologies in agriculture through the presentation of films, scientific research and modern methods of agriculture** 4: Enabling students to know about the cultivation and propagation of seasonal and permanent ornamental plants in sophisticated greenhouses using nutritional solutions (hydroponics
9. Teaching and learning strategies	
OF THE STRATEGY	Providing students with additional basics related to the outputs of thinking and analysis Forming a fluffy group to discuss various agricultural topics Asking reflective questions during lectures, such as(what, how, when and why) Preparing students for homework that requires self-explanations in causal ways

10. Course structure

Week	**hours**	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	**5**	**Bachelor**	Introduction to ornamental plants and problems hindering ornamental plants in the world and Iraq	**Practical+ theoretical**	**PAPERS**

2	**5**	**Bachelor**	Studying ornamental shrubs, their benefits ,importance and methods of traditionalization.....	**Practical+ theoretical**	**PAPERS**
3	**5**	**Bachelor**	Study of ornamental climbers, common types in Iraq ,care , climbing methods	**Practical+ theoretical**	**PAPERS**
4	**5**	**Bachelor**	Study of hedge plants	**Practical+ theoretical**	**PAPERS**
5	**5**	**Bachelor**	Cacti and succulents ,their adaptation , how to create rock gardens	**Practical+ theoretical**	**PAPERS**
6	**5**	**Bachelor**	Aquatic and semi-aquatic plants and their importance	**Practical+ theoretical**	**PAPERS**
7	**5**	**Bachelor**	Harvest flowers , commercial importance, preservation solutions, flowers , and storage	**Practical+ theoretical**	**PAPERS**
8	**5**	**Bachelor**	**Flower arrangement**	**Practical+ theoretical**	**PAPERS**
9	**5**	**Bachelor**	Miniature gardens,bonsai , glass pond farming	**Practical+ theoretical**	**PAPERS**
10	**5**	**Bachelor**	ornamental herbs,ornamental plants, ornamental plants	**Practical+ theoretical**	**PAPERS**
11	**5**	**Bachelor**	Fertilizing ornamental plants, chemical fertilizers, organic fertilizers,spraying solutions	**Practical+ theoretical**	**PAPERS**
12	**5**	**Bachelor**	Reproduction facilities Nurseries for decorations - wooden shades - greenhouses - greenhouses	**Practical+theoretical**	**PAPERS**
13	**5**	**Bachelor**	Landscaping , methylation, service operations such as cutting , fertilization , irrigation	**Practical+theoretical**	**PAPERS**
14	**5**	**Bachelor**	Landscaping , methylation, service operations such as cutting , fertilizing , irrigation , humping	**Practical+theoretical**	**PAPERS**
15	**5**	**Bachelor**	General Revision	**Practical+theoretical**	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12.Learning and Teaching Resources	Learning and Teaching Resources
Required textbooks (methodology if any)	Required textbooks (methodology if any)
Key References (Sources)	Key References (Sources)
Recommended books and references **(**scientific journals,reports ,.....) **)**	Recommended books and references **(**scientific journals,reports ,.....) **)**
Electronic references, websites	Electronic references, websites

1 Course Name
Beekeeping
2.Course number
APTE309
3. Semester/year
نصف سنوي
4. Date this description was prepared
23/4/2024
5. Available attendance forms
Compulsory
6. Number of study hours (total) Number of units (total)
5 hours , 3.5 units
7. Name of the course administrator (if more than one name is mentioned)
Eng.Sawsan Fadhil Fawaz **sawsan.fadhel@uokerbala.edu.iq**

8. Course objectives	
Objectives of the study subject	• **Enabling students to obtain knowledge and understanding of the intellectual and applied framework in the science and art of beekeeping.** • **Enabling students to obtain knowledge and understanding of beekeeping requirements and the economic importance of bees.** • **Informing students about the role of bees in increasing agricultural production in terms of mixed pollination and leads to increasing production and improving the quality of fruits**

9. Teaching and learning strategies	
OF THE STRATEGY	**1. Focus on agricultural applications:** **Real-life examples: Providing students with additional basics related to the outputs of thinking and analysis** **Field visits: Organizing field visits to ferret production areas and agricultural research centers to familiarize students with the practical applications of the importance of beekeeping and honey production.** *** Use of technology.** **Displaying illustrations of various types of bees and beehives** **Simulation: Using simulation software to represent bee species and enhance understanding of concepts.** **E-learning resources: Providing e-learning resources, such as videos and interactive exercises,** **Active Learning** **Group Discussions: Encourage students to discuss the importance of beekeeping and problem solving together.** **Ongoing Evaluation:** **Assignments and Quizzes: Assess students' understanding of beekeeping through assignments and quizzes.** **5. Linking beekeeping science with other courses**

10. Course Structure

Week	**hours**	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method

1	**5**	**Bachelor**	Top Honey Bee Products	**theoretical**	**PAPERS**
2	**5**	**Bachelor**	The importance of bee science/the origin and origin of bees /the division and classification of bees /the types of honey bees prevalent in the world /honey bee breeds/the standard qualities of honey bee breeds/the breeds of Iraqi honey bees	**theoretical**	**PAPERS**
3	**5**	**Bachelor**	Identify the most important members of the honey bee community, its specifications and the life cycle of each of them .	**theoretical**	**PAPERS**
4	**5**	**Bachelor**	Exterior of honey bee personnel/internal anatomy of bees	**theoretical**	**PAPERS**
5	**5**	**Bachelor**	Conditions for choosing the location of the apiary /identifying the most important necessary supplies and types to be used in the apiary .	**theoretical**	**PAPERS**
6	**5**	**Bachelor**	Honey bees and flowers /honey bees and vegetable crops/ pollination / fertilization / importance of honey bees in pollinating crops .	**theoretical**	**PAPERS**
7	**5**	**Bachelor**	Paper I	**theoretical**	**PAPERS**
8	**5**	**Bachelor**	Types of nutrition /carbohydrate nutrition and its alternatives / precautions to be taken during feeding .	**theoretical**	**PAPERS**
9	**5**	**Bachelor**	Theft Concept/Theft Behavior/Theft Causes/Theft Signs/ How to Theft	**theoretical**	**PAPERS**
	5	**Bachelor**	Swarming signs/ reasons for swarming/ types of parcels / disadvantages of swarming/ ways to prevent swarming/industrial swarming and ways to divide bees .	**theoretical**	**PAPERS**
11	**5**	**Bachelor**	Causes of Vulnerability of Cults / Methods of Strengthening Vulnerable Cults/Pesticide Poisoning.	**theoretical**	**PAPERS**
12	**5**	**Bachelor**	Methods of raising queens	**theoretical**	**PAPERS**
13	**5**	**Bachelor**	Identify the most important types of fungal, bacterial and viral diseases that affect honey bees/ Identify the most important insect pests and animal enemies that affect bees	**theoretical**	**PAPERS**
14	5	Bachelor	Paper II	Theoretical	**PAPERS**
15	5	Bachelor	General Revision	Theoretical	**PAPERS**

11. Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	**Methodical books**
Key References (Sources)	
Recommended books and references (scientific journals,reports ,.....))	Scientific journals within the specialty
Electronic references, websites	Internet sites

1. Course Name
Fruit Deciduous Basics 2
2. Course number
DFPR3
3. Semester/year:
Second
4. Date this description was prepared
23/4/2024
5. Available attendance forms
Compulsory
6. Number of study hours (total) Number of units (total)
5hours and 3.5alone
Name of the course administrator (if more than one name is mentioned) and email
alaa.ali@uokerbala.edu.iq
Course objectives

Objectives of the course :	**- Introducing students to the types of fruits and dividing them according to their areas of spread, their environmental requirements, the type of fruits and their plant families.** **- Introducing students to the differences between evergreen fruit and deciduous fruit.** **- Introducing the student to the environmental requirements necessary for the successful cultivation of different types and varieties of deciduous fruit.** **- Introducing the student to the importance of pruning and breeding deciduous fruit plants, the nature of pregnancy and flowering, and the types of fruit growth curves.** **- Introducing students to the types of pollination and fertilization in different types of fruit** **- Introducing students to the importance of irrigation, fertilization and various agricultural processes in the growth and harvest of fruit.** **- Introducing students to the stages of fruit growth and the appropriate times to reap each type according to the purpose of their use .** - Introducing students to methods of fruit multiplication and the importance of using assets in grafting and installing fruits
9. Teaching and learning strategies	
OF THE STRATEGY	**How to give lectures** **- Using the method of dialogue and discussion with students to deliver theoretical information to the student** **- Using projectors during lectures .** **- Assigning homework to students, preparing scientific reports on the specialization**

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
1	5	Bachelor	Apples are studied from home and spread , nutritional (economic) value,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests	Prac THEO.	PAPERS
2	5	Bachelor	Apples are studied from home and spread , nutritional(economic) value,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests.....	Prac THEO.	PAPERS
3	5	Bachelor	He studies pears, quince, and hawthorn . Habitat and prevalence Nutritional value	Prac THEO.	PAPERS

			(economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,maturation and harvesting with the study of the most important pests of each species		
4	**5**	**Bachelor**	**He studies pears, quince, and hawthorn . Habitat and spread, nutritional (economic) value,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests of each species**	**Prac THEO.**	**PAPERS**
5	**5**	**Bachelor**	**Peaches address the study of scientific name,family, habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,maturation and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
6	**5**	**Bachelor**	**The pears are identified in terms of habitat and spread , nutritional (economic) value, propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,maturation and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
7	**5**	**Bachelor**	**Apricots are studied in terms of habitat and spread , nutritional(economic) value,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
8	**5**	**Bachelor**	**Apricots are studied in terms of habitat and spread , nutritional(economic) value,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
9	**5**	**Bachelor**	**Both cherries and almonds are studied in terms of habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,maturation and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
10	**5**	**Bachelor**	**Ornamental herbs,plants of selection, plants of inscriptions, pomegranates discuss the study of the scientific name,family, habitat and spread , nutritional(economic) value,propagation ,pruning, fertilization and irrigation,flowers and nodes , fruit growth,ripening and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
11	**5**	**Bachelor**	**Figs and berries are identified as habitat and spread , nutritional (economic) value, propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests of each species**	**Prac THEO.**	**PAPERS**

12	**5**	**Bachelor**	**Al-Khaki deals with the study of the scientific name,family, habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,maturation and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
13	**5**	**Bachelor**	**A complete study of both walnuts and pecans in terms of habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests**	**Prac THEO.**	**PAPERS**
14	**5**	**Bachelor**	**Pistachios, hazelnuts, chestnuts, habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests of each species**	**Prac THEO.**	**PAPERS**
15	**5**	**Bachelor**	**Pistachios, hazelnuts, chestnuts, habitat and spread , nutritional value (economic) ,propagation, pruning, fertilization and irrigation, flowers and nodes, fruit growth,ripening and harvesting with the study of the most important pests of each species**	**Prac THEO.**	**PAPERS**

11.Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (20%) – Practical Daily Tests (10%) – Practical Final Test (20%) – Theoretical Final Test (30%)	
12.Learning and Teaching Resources	
Required textbooks (methodology if any)	**Fruit deciduous leaves / Dr. Alaa Abdul Razzaq Al-Jumaili , Majed Abdul Wahab Ahmed Abu Al-Saad**
Key References (Sources)	
Recommended books and references **(**scientific journals,reports ,.....) **)**	
Electronic references, websites	

1. Course Name:

Plant Growth Regulators

2. Course Code:

PGRE3

3. Semester / Year:

the second semester 2023-2024

4. Description Preparation Date:

23/4/2023

5. Available Attendance Forms:

Presences

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

75 Hours ; 3.5 Units

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

Name: – Sarab Abid . Muhammed Hussain Almukhtar;
Zaid Khaleel Kadhim : Dr. Asmaa Ali Salman
Email: **zaid.alnjim@uokerbala.edu.iq ; sarab.a@uokerbala.edu.iq**
Asmaa.salma.@uokerbala.edu.iq

8. Course Objectives

Course Objective	**Teaching students the basics of science related to growth.** **• Teaching students about the types of plant growth regulators** **• Teaching students how to treat plants with plant growth regulators.** **• Teaching students the physiological effects of plant growth regulators** **• Teaching students the role of plant growth regulators in increasing plant production.**

9. Teaching and Learning Strategies

Strateg	-Giving lectures. - Using the method of dialogue and discussion with students to convey theoretical information to the student. - Applying theoretical lessons in the laboratory. - Using modern laboratories. - Using projectors during lectures. Assigning students to homework to prepare scientific reports on their specialty

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
2	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
3	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
4	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
5	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
6	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports

7	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
8	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
9	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
10	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
11	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
12	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
13	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
14	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports
15	5	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports	Quick and monthly exams, class activity and reports

11. Course Evaluation
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).

12. Learning and Teaching Resources	
Required textbooks (curricular book any)	Methodological books - international research - electronic references
Main references (sources)	-Plant hormones, their physiology and biochemistry, translated by Dr. Qutaiba Muhammad -Plant Hormones T. K. Davies 1995 Propagation of horticultural plants d. Muhammad Abbas Salman -Main concepts of plant cell and tissue culture d. Mubasher Saleh Omar Dr. Abd al-Muttalib Sayyid Muhammad
Recommended books and references (scientific journals, reports...)	Plant Biotechnology T.K. R. Translated by Kazem Ibrahim Al-Sumaidaie and Dr. Qais Jamil Al-Salhi
Electronic References, Websites	Journal of the Center for Biotechnology - Al-Nahrain University Diyala Journal of Agricultural Sciences - Diyala University

Phase IIII decisions

1. Course Name:
Post-harvest Physiology of Fruit
2. Course Code:
RSHC410
3. Semester / Year:
First semester 2023-2024
4. Description Preparation Date:
25\10\2023
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
hours 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:dr. Mohammed Hadi Obaid Email: mohamme.obaid@uokerbala.edu.iq

8. Course Objectives	
Course Objectives	The aim of the course is to introduce students to physiological processes and physiological and morphological changes on fruits of vegetables and fruits from harvest time to consumer.

9. Teaching and Learning Strategies	
Strategy	Identification of modern methods of harvesting, packaging, unloading, cleaning and marketing of fruit products And vegetables. Modern storage, its methods and how to decide whether to store or not. Identification of harvesting methods in fruit and vegetables, manual and mechanical Gardening maturity and physiological maturity. Storage methods. How can storage be prolonged?

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	**Bachelor**	The economic importance of storage and the amount lost as a result of storage	Presentation /practical	Examinations
2	5	**Bachelor**	Growth and maturity of fruits and their relationship to plant hormones	Presentation /practical	Examinations
3	5	**Bachelor**	Astronomical and chemical changes that occur for fruits during maturity and storage	Presentation /practical	Examinations
4	5	**Bachelor**	Growth and maturity measures and harvest date	Presentation /practical	Examinations

5	5	**Bachelor**	Breathing in fruit during growth, maturity, and storage	Presentation /practical	Examinations
6	5	**Bachelor**	Industrial growth of fruits, loss of weight after harvest	Presentation /practical	Examinations
7	5	**Bachelor**	Harvesting methods, sorting, step-by-step, packaging and transactions of horticultural crops	Presentation /practical	
8	5	**Bachelor**	Refrigeration methods before shipment and storage for horticultural collectors, cold storage for horticultural collectors	Presentation /practical	Examinations
9	5	**Bachelor**	Storage for hors d'oeuvres in an air-modified atmosphere. Storage for horticultural groves in an aerobic environment	Presentation /practical	Examinations
10	5	**Bachelor**	General bases for determining the quality and importance of quality, factors of degradation of the quality and food value of post-harvest horticultural crops and of storage	Presentation /practical	Examinations
11	5	**Bachelor**	Picking, trading and storing important species of cut flowers and ducts.	Presentation /practical	Examinations
12	5	**Bachelor**	The economic importance of storage and the amount lost as a result of storage	Presentation /practical	Examinations
13	5	**Bachelor**	Growth and maturity of fruits and their relationship to plant hormones	Presentation /practical	Examinations
14	5	**Bachelor**	Astronomical and chemical changes that occur for fruits during maturity and storage	Presentation /practical	Examinations
15	5	**Bachelor**	General review	Presentation /practical	Examinations
11. Course Evaluation					
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).					
12. Learning and Teaching Resources					

Required textbooks (curricular books, if any)	Care and storage of gardeners Ghalib Al-Shamri
Main references (sources)	Ahmed Abdel-Moneim Hassan(1997) The report of the Committee on the Elimination of Discrimination against Women (continued) Basics of vegetable production and technology for open and protected agriculture "Grounds." Cairo University.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1. Course Name:
Landscape Architecture
2. Course Code:
LADE4
3. Semester / Year:
Chapter II 2023−2024
4. Description Preparation Date:
2023\9\20
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Dr Sabah Abdel Fleih Email: **: sabah.alrubaay@uokerbala.edu.iq** Name:.Dr. Zainab Noori Saleh Email:**zainab.noori@uokerbala.edu.iq**
8. Course Objectives

Course Objectives	• Students gain experience, skill and ability to deal with garden design and choice of the best • Dealing with various plants and their characteristics. • Define students on the basis of garden engineering and how to understand the design idea and create garden designs. • Clarification of the historical sequence of garden art from ancient times to modern times. • Learning students about environmental sustainability concepts and knowledge of modern designs at a lower cost

9. Teaching and Learning Strategies	
Strategy	1. Focus on agricultural applications: The learner was able to create designs for open and inclusive outer spaces, parks, public and private parks... Field visits: field visits to farms and agricultural research centres to familiarize students with modern features and designs. 2. Use of technology: Practical experiences: enabling students to gain access to knowledge and understand garden design according to scientific standards Simulation: use of simulation programmes to represent biological phenomena and promote understanding of concepts. E-learning sources: provision of e-learning sources, such as video clips and interactive exercises, to familiarize students with modern techniques through film screening and scientific research 3. Active learning: Group discussions: Encourage students to discuss practical experiences and solve problems together. 4. Ongoing evaluation: Duties and tests: Assessing students ' understanding of design concepts through duties and tests. 5. Providing students with access to knowledge and understanding of the intellectual and applied framework in park design science

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	5	Bachelor	Introduction to the design of parks with an explanation of the concepts and terms within the jurisdiction, frame the space of the A3 panel with the list of symbols and terms of the park, levels of open space design	Lectures	Paper daily exam
2	5	**Bachelor**	How to apply geometrics to the Earth (angles, half angles, straight lines)	Lectures	Paper daily exam
3	5	**Bachelor**	Open space design stages are four stages of shape (box, rectangle, hexagon, pentagon	Practice	Paper daily exam
4	5	**Bachelor**	Open-space schematics application of curved lines	Practice	Paper daily exam
5	5	**Bachelor**	Rules and bases for open space design, model home garden scheme	Practice	Paper daily exam
6	5	**Bachelor**	Open space design systems reduce and zoom maps	Practice	Paper daily exam
7	5	**Bachelor**	Foundations for plant uses in the design of open spaces, display of some gardens and parks (designed, implemented) through films, images and exhibitions of gardens	Practice	
8	5	**Bachelor**	Open-space coordination is a model choice (a park in college) and is planned with drawing and design in the form of a plan (a two-dimensional scheme)	Practice	Paper daily exam
9	5	**Bachelor**	Open-space types - inside and outside cities (council spaces and mid-islands)	Practice	Paper daily exam
10	5	**Bachelor**	Open spaces on civilian streets (roadsides, in front of buildings, river banks) study the design program on Broad Band V.	Practice	Paper daily exam

11	5	**Bachelor**	Open spaces with special specifications (e.g. factories, laboratories and hospitals) study the design software on Broad Band V.	Practice	Paper daily exam
12	5	**Bachelor**	Green belts (about public roads and town halls) visiting a park and park	Practice	Paper daily exam
13	5	**Bachelor**	Cost calculations (design, implementation, maintenance, maintenance) of open space display of student activities and designs (prospecting garden design and coordination	Practice	Paper daily exam
14	5	**Bachelor**	Natural and physical components of open space display student activities and designs (garde design and coordination exhibition)	Practice	Paper daily exam
15	5	**Bachelor**	Natural and physical components of open space display of student activities and designs (Faculty design and coordination exhibition)	Practice	Paper daily exam

11. Course Evaluation
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Planned methodological books for each decision Parks engineering:Taher Najem Rasul(1988) . Flowers, ornamental plants, garden design and coordination: Talif Tariq Al-Kali ' Mustafa Badr(1998)
Main references (sources)	Supporting sources for each decision
Recommended books and references (scientific journals, reports…)	Scientific journals in basic and veterinary disciplines
Electronic References, Websites	Specialized websites

1. Name of Rapporteur
Fertilizer and fertility
1. Decision symbol
SFFE4
7. Available forms of attendance
It's mandatory.
8. Chapter/year
Chapter II2023
9. Number of school hours (total)
75
10. Date of preparation of this description
20\9\2023
11. Name of curriculum official (if more than one name) and e-mail
Name:.Dr. Abbas Ali Hussein Emil:ali.nazem@uokerbala.edu.iq
12. Objectives of the decision

• Students acquire and deal with concepts of soil fertility and fertilizer in theory, practice and practice
• Students acquire scientific and laboratory bases on how to prepare and analyse soil fertility data
• Providing students with information on the problems of soil and how to deal with each problem and every type of soil
• The student has gained experience in the selection of manure suitable for the type of soil problem

9. Education and learning strategies	
Strategy	1. Focus on agricultural applications: Realistic examples: use of realistic examples and case studies from agriculture to clarify statistical conceptsDescribe the images of the essential elements in the soil and the factors that increase or decrease their graft to the plant, describe the soil types and their content of the food elements, and how to preserve their fertility. Compared to the behavior of the food elements in the different soil. - Describe the most important fertilizer the plant needs based on soil degradation results. - Prepare soil and plant samples for mandatory analysis - Run some composting experiments. Use soil degradation results to determine soil species and their viability for agriculture. Field visits: field visits to farms and agricultural research centres to familiarize students with the practical applications of biotoponymic science 2. Use of technology: Practical experiments: measure some food element in soil and vegetation and how to prepare some bioaccumulation Simulation: use of simulation programmes to represent biological phenomena and promote understanding of concepts. E-learning sources: provision of e-learning sources, such as videos and interactive exercises,

	3. Active learning: Group discussions: Encourage students to discuss practical experiences and solve problems together. 4. Ongoing evaluation: Duties and tests: Assessing students ' understanding of statistical concepts through duties and tests. 5. Excuse the student ' s experience in dealing with the various fertile problems of soil and the way in which the problem is solved

10. Course Structure

Week	Hours	Intended Learning Outcomes	Module / Course Name or	theoretical Practical	Exams
1	**5**	General concepts	**growing crops?**	**Theoretical** Practical	**Exams**
2	**5**	Sampling and analysis	**Develop stillness and comfort in fruit**	**Theoretical** Practical	**Exams**
3	**5**	Nitrogen	Nitrogen	**Theoretical** Practical	**Exams**
4	**5**	Phosphorous.	Phosphorous.	**Theoretical** Practical	**Exams**
5	**5**	Potassium	**Potassium**	**Theoretical** Practical	**Exams**
6	**5**	Monthly exam	Calcium, magnesium and sulfur	**Theoretical** Practical	**Exams**
7	**5**	Conduct a field experiment to demonstrate the importance of fertilization	Monthly exam	**Theoretical** Practical	**Exams**
8	**5**	A scientific trip to fertilizer manufacturing factories	Microelements (iron, zinc, boron, copper)	**Theoretical** Practical	**Exams**
9	**5**	Minor syphilis	Microelements (manganese, molybdenum, nickel and trace elements)	**Theoretical** Practical	**Exams**
10	**5**	Identify the devices for fertility analysis	Organic and biofertilizers	**Theoretical** Practical	**Exams**
11	**5**	General discussions	Soil fertility evaluation	**Theoretical** Practical	**Exams**
12	**5**	Field experiment for organic fertilizers	Public relations concepts of soil fertility	**Theoretical** Practical	**Exams**
13	**5**	General discussions	General discussions	**Theoretical** Practical	**Exams**
14	**5**	Monthly exam	Monthly exam	**Theoretical** Practical	**Exams**

11.Course Evaluation	
Theoretical Quarterly Tests (30%) – Practical Quarterly Tests (15%) – Practical Daily Tests (5%) – Practical Final Test (20%) – Theoretical Final Test (30%).	
12.Required textbooks	Naimi, Saad Allh Najem. 1999.Soil fertility and fertilizer.Ministry of Higher Education and Scientific Research.College of Agriculture.University of Mosul
Key References (Sources)	Ali, Nouruddin Shuqi,Hhmadullah Sulaiman, Abdul Wahab Abd al-Razzaq 2014. Soil fertility.Ministry of Higher Education and Scientific Research, Baghdad University, Faculty of Agriculture
A) Recommended books and references (scientific journals, reports, etc(.	**https://www.fertilux.lu/en/fertilizing-a-soil/**
b) Electronic references, Internet sites...,	https://www.missouribotanicalgarden.org/gardens-**gardening/your-garden/help-for-the-home-gardener**

1. Course Name:
Grape production
2. Course Code:
PGSF404
3. Semester / Year:
Chapter II2023-2024
4. Description Preparation Date:
27\3\2023
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
45 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Ala Abbas Ali Email: Name:shaimaa Sabar Mutaab Email: shaimaa.s@uokerbala.edu.iq
8. Course Objectives

Course Objectives	● To enable students to gain access to knowledge and understanding of agricultural requirements for the production of grapes in accordance with scientific standards. ● Award of a bachelor ' s degree in theory and practice in order to help produce a graduate of a high quality and enter the practical arena

9. Teaching and Learning Strategies	
Strategy	1. Focus on agricultural applications: Realistic examples: use of realistic examples and case studies from agriculture to illustrate the design methods of grape groves Field visits: Organization of field visits to farms and agricultural research centres to familiarize students with how to raise Kormat. 2. Active learning: Group discussions: Encouraging students to prepare reports on grapes. 3. Ongoing evaluation: Tests: Assessing students ' understanding of the subject through daily questions and tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Production of small grapes and fruits	Identify the parts of the vine	Lectures	Daily oral questions
2	3	Production of small grapes and fruits	Set up a grape-spattering complex in various ways	Lectures	Daily oral questions

3	3	Production of small grapes and fruits	Set up a grape-spattering complex in various ways	Lectures	Daily oral questions
4	3	Production of small grapes and fruits	Refurbishment of Education and Refurbishment of the Fruit	Lectures	Daily oral questions
5	3	\Production of small grapes and fruits	Refurbishment of Education and Refurbishment of the Fruit	Lectures	Daily oral questions
6	5	Production of small grapes and fruits	First month exam.	Lectures	
7	3	Production of small grapes and fruits	Refurbishment of Education and Refurbishment of the Fruit	Lectures	Daily oral questions
8	3	Production of small grapes and fruits	Establishment of the base media, planning and construction of the grape farm	Lectures	Daily oral questions
9	3	Production of small grapes and fruits	Some agricultural service operations	Lectures	Daily oral questions
10	3	Production of small grapes and fruits	Scientific visit to one of the grapes.	Lectures	Daily oral questions
11	3	Production of small grapes and fruits	Grape cultivation on slopes	Lectures	Daily oral questions
12	3	Production of small grapes and fruits	Methods of cultivation and production of blackbury, blobber, service operations and genie	Lectures	Daily oral questions
13	3	Production of small grapes and fruits	Methods of cultivation and production of blackbury, blobber, service operations	Lectures	Daily oral questions

			and genie		
14	3	Production of small grapes and fruits	General review	Lectures	Daily oral questions
15	3	Production of small grapes and fruits	Monthly exam	Lectures	

11. Course Evaluation	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Methodological book Production of Grapes
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1. Course Name:
Production of horticultural seeds
2. Course Code:
POHS4
3. Semester / Year:
Chapter II2023-2024
4. Description Preparation Date:
20\9\2023
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Mohammed Hadi Obaid Email: **mohammed.obaid@uokerbala.edu.iq**
8. Course Objectives

Course Objectives	:: To enable students to gain access to knowledge and understanding of the intellectual and applied framework of seed production science. • Providing students with access to knowledge and understanding of agricultural requirements to produce vegetable seeds in accordance with scientific standards • Educating students about modern techniques in agriculture through screening of films, scientific research and modern farming methods • Enabling students to know about the production of summer and winter vegetable seeds

9. Teaching and Learning Strategies	
Strategy	. Focus on agricultural applications: - Providing students with additional basics for thinking and analysis outputs - Establishment of a fascist group to discuss various agricultural issues - Asking questions of thought during lectures includes "what, how, when, why." - preparing students with homework that requires self-explaining in causal ways 2. Use of technology: Practical experiments: Seed biopsy and how to prepare a seed production program from plant to harvest Simulation: use of simulation programmes to represent biological phenomena and promote understanding of concepts. E-learning sources: provision of e-learning sources, such as videos and interactive exercises, 3. Active learning: Group discussions: Encourage students to discuss practical experiences and solve problems together. 4. Ongoing evaluation: Duties and tests: daily examinations with discussion questions within the lecture Degree of participation in questions relating to the subject matter Specific levels of field duties and reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Bachlor	The importance of using improved seeds.	**theoretical** Practical	Exams

			Seed and stages of formation from pollination to maturit		
2	5	Bachlor	Factors affecting flower pollination, fruit contract and seed formation	**theoretical** Practical	Exams
3	5	Bachlor	Vitality of vegetable seeds and factors affecting them Vegetable seed plants are causes and factors affecting it	**theoreticl** Practical	Exams
4	5	Bachlor	The survival of vegetable seeds, its causes and the factors affecting it.	**theoretical** Practical	Exams
5	5	Bachlor	Flower-producing silhouette in the vegetables.	**theoretical** Practical	Exams
6	5	Bachlor	The basics of seed production and certified anti-pharmaceuticals.	**theoretical** Practical	Exams
7	5	Bachlor	Factors to be provided for seed production, harvesting, extraction and circulation	**theoretical** Practical	Exams
8	5	Bachlor	The production methods of important vegetable seeds in Iraq include - the flowers - the seeds and their specifications. Spatial and temporal isolation of the most commonly cultivated species in the region	**theoretical** Practical	Exams
9	5	Bachlor	Crusade 5-Baghaleh 6-Raramiya 7-Nargsy 8-Babba 9-Virgin 10-Shalik	**theoretical** Practical	Exams
10	5	Bachlor	Cleaning and drying of seeds - cleaning and plant tests of vegetable seeds	**theoretical** Practical	Exams
11	5	Bachlor	Packaging seeds and storage methods	**theoretical** Practical	Exams
12	5	Bachlor	Factors affecting the vitality of stored vegetable seeds	**theoretical** Practical	Exams

13	5	Bachlor	Seed rolls in the field and the store.	**theoretical** Practical	Exams
14	5	Bachlor	The handling and marketing of seeds, regulations and laws governing them	**theoretical** Practical	Exams
15	5	Bachlor	General review	**theoretical** Practical	Exams

11. Course Evaluation
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Planned methodological books for each decision
Main references (sources)	Supporting sources for each decision
Recommended books and references (scientific journals, reports...)	Scientific journals in basic and veterinary disciplines
Electronic References, Websites	Specialized websites

1. Course Name:
Palm production
2. Course Code:
PAPR406
3. Semester / Year:
Chapter II2023-2024
4. Description Preparation Date:
20\9\2024
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Harath Mahmoud Aziz Email :harith.mhmod@uokerbala.edu.iq Name:Montader Muhammad Raheef Email:
8. Course Objectives

Course Objectives	● To enable students to gain access to knowledge and understanding of the agricultural requirements of palm production according to scientific standards. · The student has acquired knowledge and experience of distinguishing between the types of turban. · The student ' s experience in performing retrofitting, refining and altruism...Blah-. Oxab student experience in how to plant liquids · A student has acquired experience in distinguishing between platinum and pads ● The student has gained experience in distinguishing between female and male flowers

9. Teaching and Learning Strategies	
Strategy	.1 . Focus on agricultural applications: Realistic examples: use of realistic examples and case studies from agriculture to illustrate the design methods of palm groves Field visits: Organization of field visits to farms and agricultural research centres to familiarize students with how to establish gardens. 2. Active learning: Group discussions: Encouraging students to prepare palm tree reports. 3. Ongoing evaluation: Tests: Assessing students ' understanding of the subject through daily questions and tests Providing students with the basics, knowledge subjects and systems set out in: 1. Modalities for the establishment of palm groves and agricultural distances. 2. Necronomics, palm tree growth and the process of abdominal decomposition 3. Knowledge of dates for the flowering of male and female species and the procedure for vaccination 4 ways of purging palm trees with vases and seeds 5. Identification of sick and insect injuries to palm trees

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Required Learning Outcomes	Introduction	presentation	Evaluation method

2	5	History of the emergence of tiger palms, vegetation, nutritional importance and economic uses	Palm production	presentation	Conduct daily tests by asking questions about the subject matter of the subject matter to see how they understand the subject.
3	5	The formal and synthetic properties of the meter palm.	Palm production	presentation	Question and answers
4	5	Seed plants, the indigestion and the penetrating trout of the fruit.	Palm production	presentation	Field trials
5	5	Diphtheria of vase lights, stem structure, root, and sucking hairs.	Palm production	presentation +field	Question and answers
6	5	Screaming, pollination, fertilisation, contract, influence the source of pollination pills, and use growth organizations to pollinate.	Palm production	presentation +field	Question and answers
7	5	First month exam	First month exam		
8	5	The methods of breeding palm trees and the causes of	Palm production	presentation	Question and answers

		the death of the liquids.			
9	5	Palm service operations	Palm production	presentation	Question and answers
10	5	Palm service operations	Palm production	presentation	Question and answers
11	5	Gathering of tigers, palm-up methods, preparation, filling and storage of tigers.	Palm production	presentation	Question and answers
12	5	Microbes and other germs	Palm production	presentation	Question and answers
13	5	Bugs that get fruit.	Palm production	presentation	Question and answers
14	5	Second month exam	Second month exam		
15	5	Gathering tigers and palm-up methods.	Palm production	presentation	Question and answers

11. Course Evaluation
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Methodological books - palm production
Main references (sources)	METHODOLOGICAL BOOKS FOR GLOBAL RESEARCH
Recommended books and references (scientific journals, reports...)	Methodological books, foreign sources, global university sites, library sites and publishing houses
Electronic References, Websites	The Internet in general, scientific sites like Coke, Scooler, Reserge Kate, Scoobs, publishing houses.

<table>
<tr><td>Course Instructor</td><td>Issa T. khalaf</td></tr>
<tr><td>E_mail</td><td></td></tr>
<tr><td>Title</td><td>Dr.</td></tr>
<tr><td>Course coordinator</td><td>Learn the students how to think in English</td></tr>
<tr><td>Course Description</td><td>Giving the students some notes relevant to their general field of study i.e Botany</td></tr>
<tr><td>Textbook</td><td>English in Agriculture</td></tr>
<tr><td>References</td><td>Longman English Grammer
A Practical English Grammer</td></tr>
<tr><td>Course Assessment</td><td>
<table>
<tr><td>Term Tests</td><td>Laboratory</td><td>Quizzes</td><td>Project</td><td>Final Exam</td></tr>
<tr><td>As (35%)</td><td>As (15%)</td><td>As(10%)</td><td>---------</td><td>As (40%)</td></tr>
</table>
</td></tr>
<tr><td>General notes</td><td></td></tr>
</table>

Week	Date	Topics covered	Lab. Experiment Assignments	Notes
1		Introduction		
2		Tenses in general		
3		Verbs		
4		Nouns		
5		Plant part &their Function		
6		Plant part &their Function		
7		Exersices		
8		Exersices		
9		exam		
10		Active &passive voice		
11		Active &passive voice		
12		Germination&Emergence		
13		Germination&Emergence		
14		Exam		
15		Excersices		
16		Excersices		
	aa	**Half—Year Break**		
17		Introduction		
18		Soils		
19		Soils		
20		Exersices		
21		Excercies		
22		Irrigation & drainage		
23		exam		
24		Excersices		
25		Excersices		
26		Fertilizers		
27		Fertilizers		
28		exam		
29		Excersices		
30		Excersices		
31		Dialogue		
32		Dialogue		

1. Course Name:
Protected Cultivation
2. Course Code:
PRCU4
3. Semester / Year:
Chapter I2023-2024
4. Description Preparation Date:
20\9\2024
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Hisham aziz Oumran Email: **hisham.aziz@uokerbala.edu.iq**
8. Course Objectives

Course Objectives	1.Understanding the fundamentals and details of protected agriculture and the impact of environmental factors on them. 2. Inform students of the types of plants that can be grown under this system. 3. Promotion of practical skills in plant cultivation in protected media
9. Teaching and Learning Strategies	
Strategy	1.To encourage students to grow practical ways to understand more than one way to multiply plants. 2. Take advantage of technology such as plant applications to promote interaction and effective learning. 3. Promote collaboration among students in plant studies and exchange of knowledge to stimulate group learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Protected agriculture, its definition, the reality of agriculture in Iraq and its handicaps	Foundations for the construction of protected houses	Lectures and field application	Daily, monthly, paper and oral examinations
2	5	Types and historical evolution of protected homes	Types and engineering forms of sheltered houses	Lectures and field application	Daily, monthly, paper and oral examinations
3	5	Benefits of protected agriculture, productivity	Methods of establishing protected houses	Lectures and field application	Daily, monthly, paper and oral examinations

		and profitability of crops			
4	5	Types, characteristics and specifications of blankets	Protected houses	Lectures and field application	Daily, monthly, paper and oral examinations
5	5	Means of protection against environmental conditions	Supplementary to the user community of protected homes	Lectures and field application	Daily, monthly, paper and oral examinations
6	5	Environment of protected homes	Science trip.	Lectures and field application	Daily, monthly, paper and oral examinations
7	5	Heating of protected houses	Agricultural operations in protected agriculture		
8	5	Refrigeration of protected houses	Soil sterilisations	Lectures and field application	Daily, monthly, paper and oral examinations
9	5	Control of in-house carbon dioxide ratio	In-house irrigation	Lectures and field application	Daily, monthly, paper and oral examinations
10	5	Agricultural operations in protected homes	In-house composting	Lectures and field application	Daily, monthly, paper and oral examinations
11	5	The most important diseases of plants in protected homes	Instruct plant growth (education methods)	Lectures and field application	Daily, monthly, paper and oral examinations
12	5	Plant protection, pest control and agricultural diseases	Instruct plant growth (education methods)	Lectures and field application	Daily, monthly, paper and oral examinations

13	5	Integrated plant disease management within protected homes	Instruct plant growth (education methods)	Lectures and field application	Daily, monthly, paper and oral examinations
14	5	Production of flowers under protected environment	Combating jungles, insects and diseases	Lectures and field application	
15	5	Production of flowers under protected environment	Combating jungles, insects and diseases	Lectures and field application	Daily, monthly, paper and oral examinations

11. Course Evaluation	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1. Course Name:
Plant Biotechnology
2. Course Code:
BIOT408
3. Semester / Year:
ChapterI I2023-2024
4. Description Preparation Date:
1\10\2023
5. Available Attendance Forms:
Presences
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ; 3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:Dr. Sarab Abdelhady Mohamed Hussein Email **sarab.a@uokerbala.edu.iq**
8. Course Objectives

Course Objectives	• An explanation of the flow of genetic information within the biological system. Or it's the path of DNA conversion of the genetic material to MRNA rebuzzi acid, which is translated into reposoms as proteins. • The preparation of specialists who are familiar with the basics of biotechnicals in theory and in practice capable of meeting the needs of the labour market. • Understanding the basic principle of molecular biology (mixage, copying, translation) and that a student can distinguish between RNA and DNA functions. • Cooperation with State institutions and the private sector through the provision of scientific advice, advice and laboratory analysis in the areas of genetic, environmental, industrial and microbiology engineering. • Promote scientific research and provide students with basic skills with biotechnology and its applications in all fields. • Encourage the teaching staff to participate in scientific forums within and outside the country. Contributing to the solution of scientific problems served national development plans

9. Teaching and Learning Strategies	
Strategy	. Focus on agricultural applications: Realistic examples: Using realistic examples and case studies from agriculture to clarify concepts of molecular biology. Field visits: Organization of field visits to agricultural farms and research centres to familiarize students with the practical applications of biotechnology. Students know that Nucleus or Nucleoid has all the genetic information in DNA and controls all cell functions. 2. Use of technology: Practical experiences: teaching students how to extract and electrode DNA, Simulation: use of simulation programmes to represent biological phenomena and promote understanding of concepts. E-learning sources: provision of e-learning sources, such as videos and interactive exercises, 3. Active learning: Group discussions: Encourage students to discuss practical experiences and solve problems together. 4. Ongoing evaluation: Duties and tests: Assessing students ' understanding of concepts of field-based experience for future use in medical laboratories and research centres through duties and tests.

	To identify the different ways in which genetic material is transported and how it is used. Providing students with access to knowledge and understanding of living statistics and English

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Bachelor	Applications of biotechnology in various fields	Presentation /practical	examinations
2	5	Bachelor	The nature of the genetic material in the plant and its doubling	Presentation /practical	examinations
3	5	Bachelor	DNA repeats.	Presentation /practical	examinations
4	5	Bachelor	Plastide genome.	Presentation /practical	examinations
5	5	Bachelor	Genum Mytocondria.	Presentation /practical	examinations
6	5	Bachelor.	The genetic expression in the plant.	Presentation /practical	examinations
7	5	Bachelor	Reproduction process	Presentation /practical	Examinations+Experience.
8	5	Bachelor	Translation process	Presentation /practical	examinations
9	5	Bachelor	Gin clona	Presentation /practical	examinations
10	5	Bachelor	Clone transmitters.	Presentation /practical	examinations
11	5	Bachelor	Genetic mutation in plants	Presentation /practical	examinations
12	5	Bachelor	Direct gene transport routes in plants	Presentation /practical	examinations
13	5	Bachelor	The multiplier reaction of the DNA chain and its applications (PCR)	Presentation /practical	Examinations+Experience
14	5	Bachelor	Applications of biotechnology in various fields	Presentation /practical	examinations

15	5	Bachelor	Applications of biotechnology in various fields	Presentation /practical	examinations

Course Evaluation 11.	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Microbiology and Biotechnology (2001)** **A Text book of Biotechnology (2006)** **1-Methods in Biotechnology (1997)** **2- Biotechnology, Principles and Application (1988**
Main references (sources)	1- Mohammed Bagher Sahib ALsheab, Ali Hamoud al-Sa i di, Haydar Kamel Zeidan (2013). Genetic principles 2. Maha Ali Fahmi Sadiqi. (2013). Basic genetics. 3. Abbas Hussein M ' Guir Al-Rabiri.)2013) Introduction to Genetics
Recommended books and references (scientific journals, reports...)	Scientific journals in basic and veterinary disciplines
Electronic References, Websites	**David P. Clark, Nanette J. Pazdernik and Michelle R. McGehee. (2019). Molecular Biology. Third Edition.**