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: Al-Furat Al-Awsat Technical University

Faculty/Institute: Kufa Technical Institute

Scientific Department: Department of Plant Production Technologies

Academic or Professional Program Name: Department of Plant Production Technologies

Final Certificate Name: Technical Diploma

Academic System: Corsi system

Description Preparation Date : 6/5/2024

File Completion Date: 6/5/2024

Signature:

Head of Department Name:

Assist. Pro.Dr. Hayder Ibadi Naser Hussein Al-Issawi

Date: 6/5/2024

Signature:

Scientific Associate Name:

Assist. Pro.Dr. Nadia Abdul Hadi Al Nuaimi

Date: 6/5/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Kholoud Muzaffar Abdel Ali

Date: 6 / 5/2024

Signature:

Approval of the Dean

1. **Program Vision**
Building a bright department to be one of the advanced scientific departments and to provide a highly skilled educational and training service in the fields of plant production, as well as quality in technical education, leadership and distinction in plant production techniques, serving agriculture in the country, and supporting educational and agricultural development and the national economy.

2. **Program Mission**
Qualifying and training human cadres scientifically, professionally and technically to work in agricultural production projects and supplying the labor market (both government and private sectors) with staff who hold a scientific degree and are equipped with modern information and techniques in the fields of advanced agriculture.

3. **Program Objectives**
The department aims to graduate qualified technical personnel concerned with the production of winter and summer vegetable crops, field crops, protected agriculture, the establishment of gardens, nurseries, fruit orchards, and tissue culture, in addition to the department's contribution to combating agricultural pests and its practice in the nature of agricultural land investment. Using agricultural machinery and equipment in plant production operations and contributing to beekeeping and honey production.

4. **Program Accreditation**
Program accreditation has not been obtained for the Department of Plant Production Technologies

5. **Other external influences**
There is a relationship between graduate students, the labor market and other productive institutions.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	**35**	**140**	**100%**	**The course is basic**
Summer Training	**270**	**-**		
Other				

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

7. Program Description

Year/Level		Course Code	Course Name	Credit Hours	
				theoretical	practical
The first class	Autumn course		Department of Plant Production Technologies	13	20
	Spring course			13	22
The second class	Autumn course		Department of Plant Production Technologies	13	22
	Spring course			11	22

8. Expected learning outcomes of the program

Knowledge	
Learning outcomes 1 A- The program's cognitive objectives 1- Plant protection and farm management 2- Soil and beekeeping 3- Summer and winter field crops 4- Production of deciduous and persistent fruits 5- Plant diseases and general insects 6- Livestock production and protected agriculture	Learning Outcomes Statement 2 A- The cognitive objectives of the course 1- Controlling insect and non-insect pests 2- How to use modern irrigation systems and overcome soil salinity 3- Production of summer and winter field crops 4- Production and propagation of various seedlings of deciduous and perennial fruit trees. 5- How to develop integrated programs to manage plant diseases and pests. 6- How to establish poultry and protected agriculture projects
Skills	
Learning outcomes 1 B- The program's skill objectives 1-Learn about irrigation systems, control programs, and orchard planning 2 - Improving maintenance and maintenance in the use of agricultural devices and equipment 3 - Acquire skills in agriculture, control, irrigation and planning	Learning Outcomes Statement 2 B- The skills objectives of the course. 1 - Establishing and examining agricultural systems 2- Determine the location of the defect 3 - How to manage several fields at once 4- Controlling other side effects

Ethics	
Learning outcomes 1 C- The emotional and value objectives of the programme. 1- Production of seedlings and seedlings. 2- Thinking and diversifying ways to cultivate modern and productive products. 3- Controlling the factors that help agriculture and increase production. 4-The ability to work in agricultural institutions and companies.	Learning Outcomes Statement 2 C- The emotional and value objectives of the course. 1- The student will have the ability to make agricultural designs and calculations for production projects. 2- Acquire the skill of protecting the field and increasing production. 3-Knowledge of service operations and systems development. 4- Teaching the student to prepare a research plan.

9. Teaching and Learning Strategies

Teaching Strategies

It includes a set of general rules and broad outlines that concern means of achieving the desired goals of teaching through advance planning and setting future plans for (presentation - coordination - training - discussion), organizing the classroom environment, and classroom management for the purpose of developing students' education.

Learning strategies

It includes the behaviors and procedures that students engage in that aim to influence how they are able to process information and learn different tasks. Learning is strategic when students are aware of the special skills and strategies (specific procedures and methods) that they use in learning.

10. Evaluation methods

Daily exams
Oral exams
Daily and monthly exams
final exams

11.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor	0	2			2	0
Lecturer	0	1			1	0

Assistant Lecturer	0	4			4	0

Professional Development
Mentoring new faculty members
1-Guidance. 2- Workshops. 3-Discussions. 4- Scientific seminars.
Professional development of faculty members
1- Through the scientific conference 2- Scientific seminars in the department. 3- Discussions for professors and students. 4- Research seminars. 5- Seminars. 6- Workshops 7- Courses.

12. Acceptance Criterion

Average: 60
Branch graduated from: Scientific - Applied - Biological - Vocational (Agricultural)

13. The most important sources of information about the program

1- Methodical books
2- Professors' lectures
3- Scientific bags
4- Scientific research and theses
5- Internet sources

14. Program Development Plan

The attempt to develop any course is done first by evaluating it and then evaluating it to determine or diagnose its strengths and weaknesses and then develop successful solutions to advance the course. I believe that the best way to update the course vocabulary is scientific communication through access to the latest sources, whether books or published research.

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	
The First year	Autumn course	Pp0101	Winter field crops	Basic specialty	✓	✓			✓	✓	✓		✓	✓			
		Pp0102	Winter vegetable crops	Basic specialty	✓	✓			✓	✓	✓		✓	✓			
		Pp0103	Forests	Basic specialty	✓	✓			✓	✓	✓		✓	✓			
		Pp0104	Plant protection	Assistant	✓	✓			✓	✓	✓		✓	✓			
		Pp0105	General soil	Assistant	✓	✓			✓	✓	✓		✓	✓			
		Pp0106	Pullers and machines	Assistant	✓	✓			✓	✓	✓		✓	✓			
		Pp07	Animal production	Assistant	✓	✓			✓	✓	✓		✓	✓	✓		
		Pp0108	Computer applications/1	Assistant	✓		✓		✓	✓			✓		✓		
		Pp0110	English language	General	✓		✓		✓	✓			✓		✓		

		Pp0109	**Democracy and human rights**	**Assistant**	✓		✓		✓	✓			✓		✓	
	Spring course	**Pp0111**	**Summer field crops**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0112	**Summer vegetable crops**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0113	**Sustainable fruit production***	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0114	**Nurseries***	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0115	**General insects**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0116	**Statistics and experiment planning**	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0117	**Farm management**	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0108	**Computer applications**	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0110	**English language**	**General**	✓		✓		✓	✓			✓		✓	
		Pp0121	**Protected agriculture**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0122	**Breeding and improving plants***	**Basic specialty**	✓		✓		✓	✓			✓		✓	

The second Year	**Autumn course**	**Pp0123**	**Seed production**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0124	**Plant diseases**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0125	**Tissue and plant cell culture***	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0126	**Fall fruit production***	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0127	**Irrigation and salinity***	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0128	**Graduation research project***	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0129	**Computer applications**	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0130	**English language**	**General**	✓		✓		✓	✓			✓		✓	
		Pp0138	**Baath Party crimes in Iraq**	**Assistant**	✓		✓		✓	✓			✓		✓	
		Pp0131	**Decorations and garden engineering**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0133	**Fodder crops and pastures**	**Basic specialty**	✓		✓		✓	✓			✓		✓	
		Pp0132	**Care and storage***	**Basic**	✓		✓		✓	✓			✓		✓	

				specialty												
	Spring course	Pp0134	Jungles and their control*	Basic specialty	✓		✓		✓	✓			✓		✓	
		Pp0135	Beekeeping	Basic specialty	✓		✓		✓	✓			✓		✓	
		Pp0136	Organic agriculture *	Basic specialty	✓		✓		✓	✓	✓		✓			
		Pp0137	Fertility and fertilization*	Assistant	✓		✓		✓	✓	✓		✓			
		Pp0128	Graduation research project*	Basic specialty	✓		✓		✓	✓			✓		✓	
		Pp0129	Computer applications	Assistant	✓		✓		✓	✓			✓		✓	
		Pp0130	English language	General	✓		✓		✓	✓			✓		✓	

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

Course 1 from pages 12 to 15

Course 2 from pages 16 to 19

Course 3 from pages 20 to 24

Course 4 from pages 12 to 15

Course 5 from pages 12 to 15

Course 6 from pages 12 to 15

Course 7 from pages 12 to 15

Course 8 from pages 12 to 15

Course 9 from pages 12 to 15

Course 10 from pages 12 to 15

Course 11 from pages 12 to 15

Course 12 from pages 12 to 15

Course 13 from pages 12 to 15

Course 14 from pages 12 to 15

Course 15 from pages 12 to 15

Course 16 from pages 12 to 15

Course 17 from pages 12 to 15

Course 18 from pages 12 to 15

Course 19 from pages 12 to 15

Course 20 from pages 12 to 15

The Course 1

1. Course Name:
Theoretical plant protection
2. Course Code:
3. Semester / Year:
courses
4. Description Preparation Date:
29/2/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
140/140
7. Course administrator's name (mention all, if more than one name)
Name: Assis. Pro. Dr Haider Abadi Nasser Al-Issawi **Email: haider-alisawi@atu.edu.iq**
8. Course Objectives

Course Objectives	**• Providing the student with information that enables him to know many of the basics of plan protection science first, then studying the diseas and insects of each type and the agricultural importance of each of them. As a result, the student will be familiar with the concepts of diseases and insects, each type separately, and t types of symptoms they produce.** **• Enable the student to isolate and diagnose it from various samples and determine its type through the symptoms it causes on plants.**

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing studer education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the**	**Insect harm and benefits**	**Lecture**	**Exam**

		ability to apply it correctly			
The Second	1	Understanding the topic and the ability to apply it correctly	Factors for the success of insects and their spread in nature	Lecture	Exam
The Third	1	Understanding the topic and the ability to apply it correctly	Reproduction and growth - methods of insect reproduction	Lecture	Exam
The Fourth	1	Understanding the topic and the ability to apply it correctly	Types of nutrition in insects	Lecture	Report + Evaluation
The Fifth	1	Understanding the topic and the ability to apply it correctly	The environments in which insects live	Lecture	Exam
The Sixth	1	Understanding the topic and the ability to apply it correctly	Non-insect animal pests - mite order	Lecture	Exam
The Seventh	1	Understanding the topic and the ability to apply it correctly	Non-insect animal pests - order of rodents	Lecture	Exam
The Eighth	1	Understanding the topic and the ability to apply it correctly	Non-insect anima pests - the order o birds and rodents	Lecture	Exam
The Ninth	1	Understanding the topic and the ability to apply it correctly	The economic importance of pla diseases and the los resulting from the giving examples of most important diseases in Iraq a the world	Lecture	Exam
The tenth	1	Understanding the topic and the ability to apply it correctly	Some definitions in plant pathology and their role in the upcoming topics	Lecture	Report + Evaluation
Eleventh	1	Understanding the topic and the ability to apply it correctly	The manner or method by which the pathogen enters plant tissue	Lecture	Exam
Twelveth	1	Understanding the topic and the ability to apply it	Methods of transmission and spread of plant	Lecture	Exam

		correctly	**diseases**		
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Predisposing factors to plant diseases.**	**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Fungi - characteristics of fungi, methods of feeding fungi, methods of reproduction of fungi, division of fungi.**	**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Nematodes as plant pathogens - nematode body structure, type of damage they cause**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if

his hours of absence exceed 10% of the total hours for that subject.	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 2

1. Course Name:	
General soil	
2. Course Code:	
3. Semester / Year:	
Courses	
4. Description Preparation Date:	
29/2/2024	
5. Available Attendance Forms:	
Mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
7. Course administrator's name (mention all, if more than one name)	
Assis. Pro. Dr Shather Abdel Hamza Omran **Email: iraq.shadhar@yahoo.com**	
8. Course Objectives	
Course Objectives	**Providing the student with information that enables him to know many of the basics of soil science first, then studying the physical and chemical characteristics of soil for each type an the importance of each of them agriculturally. A a result, the student will be familiar with the general concepts of soil science and each type separately and the types of characteristics that distinguish them, and enabling the student to know them from various samples. Its type is determined by the shape of its tissue and its**

	chemical and physical characteristics.

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**	**Soil science - its branches, importance and purpose of soil analysis**	**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**	**Some morphological characteristics of soil**	**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the ability to apply it correctly**	**Physical characteristics of soil and their relationship to plant growth**	**Lecture**	**Exam**
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**	**Physical characteristics of soil and their relationship to plant growth**	**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**	**Physical characteristics of soil and their relationship to plant growth**	**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**	**Soil water**	**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**	**Soil temperature and soil air**	**Lecture**	**Exam**

The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**	**Organic colloids**	**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**	**Clay minerals**	**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Cation exchange capacity of soil.**	**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**	**Electrical conductivity of soil Ec**	**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**	**Soil salinity**	**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Nutrients and their importance to plants.**	**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Lime and gypsum in the soil**	**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Lime and gypsum in the soil**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

2- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.
2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 3

1. Course Name:
Agricultural tractors and machines
2. Course Code:
3. Semester / Year:
Courses
4. Description Preparation Date:
29/2/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
140/140
7. Course administrator's name (mention all, if more than one name)

Name: Assis. Lecturer .Ahmed Jwad Kasim
Email: ahmed.kadhim@atu.edu.iq

8. Course Objectives

Course Objectives	**Providing the student with information that enables him to know many of the basics of the science of tractors and agricultural machinery first, then studying the main parts of the tracto and the importance and how each part works. I the end, the student will be familiar with the concepts of the operation of tractor systems and identifying faults.**

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing studer education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**Knowing the importance of agricultural mechanization - types of tractors - public safety**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of the main parts of the tug and the function of each part - transmission devices, their parts and function**	**Lecture**	**Exam**
The Third	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of pulling systems (fuel system - cooling system) - types - important parts and benefits - malfunctions and maintenance**	**Lecture**	**Exam**

The Fourth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of the lubrication system - air purification system - exhaust system and silencer - its parts, function and malfunctions**	**Lecture**	**Report + Evaluation**
The Fifth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of the electrical system - parts - the benefit, function and maintenance of each part**	**Lecture**	**Exam**
The Sixth	**2**	**Understanding the topic and the ability to apply it correctly**	**Knowledge of the devices and means of exploiting power in the tug, the hydraulic system - the traction shaft - the rear drive shaft P.T.O - the drive pulley**	**Lecture**	**Exam**
The Seventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of the tug structure - parts and benefits - guidance system - stops - tug navigation device**	**Lecture**	**Exam**
The Eighth	**2**	**Understanding the topic and the ability to apply it correctly**	**Knowledge of the typ of plows - the importa of the plowing proces the characteristics o good plowing**	**Lecture**	**Exam**
The Ninth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of dumper plow disc dumper plows - their use - their parts maintenance and methods of plowing w them.**	**Lecture**	**Exam**
The tenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of excavator plows - rotary plows - underground plows - their use - their parts**	**Lecture**	**Report + Evaluation**
Eleventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Knowledge of soil smoothing equipment - its use - its parts - leveling, planning and channel-digging machines - its importance - its use**	**Lecture**	**Exam**

Twelveth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of mechanized agriculture - fertilizer and seed spreading machine - its parts - types - calibration**	**Lecture**	**Exam**
Thirteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of fertilized seed in brief - its parts - field evaluation - laboratory evaluation**	**Lecture**	**Exam**
Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Study of agricultural machines in lines - potato cultivation - types - standardization**	**Lecture**	**Exam**
Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Fodder cutting machines - their types - their parts, combined harvester - their work - the main assemblies of the harvester**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

3- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion. In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 4

1. Course Name:
Fodder crops and pastures
2. Course Code:
3. Semester / Year:
courses
4. Description Preparation Date:
29/2/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
140/140
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer. Ali Sameer Mueen **Email: Ali.sameer.iku@atu.edu.iq**

8. Course Objectives

Course Objectives	**Providing the student with information that enables him to know many of the basics of the science of forage and pasture crops, first, then preparing and preparing the land for cultivatio for each type, and the importance of each of th agriculturally. In the end, the student will be familiar with the concepts of the science of fora and pasture crops and each type of them separately, and the types of characteristics that distinguish them, and enabling the student to know them from Various samples and determining their type through shape and their effect on farm animal.**

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing studer education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**	**The importance of livestock, the importance of fodder crops and their role in meeting the fodder needs of livestock, the reality of cultivating fodder crops in Iraq**	**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**	**Factors affecting fodder production and quality, exploitation of saline and barren lands in the production of fodder crops**	**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the ability to apply it correctly**	**Production of leguminous fodder crops (1) (jet) economic importance, suitable environmental conditions, production of jet seeds.**	**Lecture**	**Exam**

The Fourth	1	Understanding the topic and the ability to apply it correctly	(2) - (Clover) is the same vocabulary as Jat.	Lecture	Report + Evaluation
The Fifth	1	Understanding the topic and the ability to apply it correctly	(3) - (hartman, karat, kakouz) the same vocabulary as before.	Lecture	Exam
The Sixth	1	Understanding the topic and the ability to apply it correctly	Production of cereal fodder crops (1) yellow corn, including its economic importance, suitable environmental conditions, production foundations, and its fodder uses.	Lecture	Exam
The Seventh	1	Understanding the topic and the ability to apply it correctly	(2) - (White corn, Sudanese cannabis) The same vocabulary as before, with the mention of species belonging to the genus Sorghum. The danger of green feed to animals as a result of poisoning with hydrocyanic acid (HCN).	Lecture	Exam
The Eighth	1	Understanding the topic and the ability to apply it correctly	(3) - (Barley, oats, millet) economic importance, bas of production, species use for the purpose of fodder, exploitation for the purpo of fodder.	Lecture	Exam
The Ninth	1	Understanding the topic and the ability to apply it correctly	Concentrated feed materi their importance in anima nutrition, their sources, th nutritional content (chemi composition).	Lecture	Exam
The tenth	1	Understanding the topic and the ability to apply it correctly	Feed mixtures, their definition, importance, types, and the basics of the elements included in the feed mixture.	Lecture	Report + Evaluation
Eleventh	1	Understanding the topic and the ability to apply it correctly	Threshing, its definition, its importance in feeding animals, why do we resort to threshing, determining the appropriate time for cutting according to the stages of growth, drying methods, types of loss of fodder material during the threshing process.	Lecture	Exam

Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**	**Silage, its definition, the importance of its manufacture, manufacturing steps, determining the stages of cutting, chemical changes to the feed during preservation, methods of preserving silage, preservatives, types of loss in nutritional value resulting from preservation.**	**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Pastures, their definition, importance, and types.**	**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Foundations of quantitative assessment of pasture germination, determining pasture productivity**	**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**	**Reasons for the deterioration of natural pastures, methods for improving natural pastures and how to preserve them.**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

4- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance,

daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 5

1. Course Name:
Weeds&Weeds control
2. Course Code:
3. Semester / Year:
courses
4. Description Preparation Date:
29/2/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
140/140
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer . Ahmed Jawad Kadhim **Email: ahmed.kadhim@atu.edu.iq**
8. Course Objectives

Course Objectives	**Providing the student with information that**

	enables him to know many of the basics of bush science first, then studying how to diagnose eac type and the agricultural importance of each of them. In the end, the student will be familiar wi the concepts of bush science and each type separately and the types of damage they produ enabling the student to collect and diagnose the from various soils and determine their type. Through the form of symptoms it causes on plants.

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**Weed science , Aweed , the impoyance , the characterise of weeds .**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**The harmful effects of weeds .**	**Lecture**	**Exam**
The Third	**2**	**Understanding the topic and the ability to apply it correctly**	**The advantage of weeds .**	**Lecture**	**Exam**
The Fourth	**2**	**Understanding the topic and the ability to apply it correctly**	**The classification and weeds (according the life cycle and the growth season)**	**Lecture**	**Report + Evaluation**
The Fifth	**2**	**Understanding the topic and the ability to apply it correctly**	**The classification and weeds (according the life cycle and the growth season)**	**Lecture**	**Exam**
The Sixth	**2**	**Understanding the topic and the**	**Reproduction and dissemination of**	**Lecture**	**Exam**

		ability to apply it correctly	**weeds**		
The Seventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Reproduction and dissemination of weeds**	**Lecture**	**Exam**
The Eighth	**2**	**Understanding the topic and the ability to apply it correctly**	**comparison betwe the mechanical (manual) and chemi methods of weed control .**	**Lecture**	**Exam**
The Ninth	**2**	**Understanding the topic and the ability to apply it correctly**	**Herbicides formulation .**	**Lecture**	**Exam**
The tenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Prevention of weed spread**	**Lecture**	**Report + Evaluation**
Eleventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Methods of Herbicides classification .**	**Lecture**	**Exam**
Twelveth	**2**	**Understanding the topic and the ability to apply it correctly**	**Methods of Herbicides classification .**	**Lecture**	**Exam**
Thirteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Methods of Herbicides classification**	**Lecture**	**Exam**
Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Methods of Herbicides classification**	**Lecture**	**Exam**
Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Adjuvants and surface – active agents .**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				Article that does not contain my work		
The exam		Theoretical	Practical	The exam		Theoretical
Pursuit	First month exam	10%	10%	Pursuit	First month exam	20%
	Second month exam	10%	10%		Second month exam	20%
	Evaluation*	5%	5%		Evaluation*	10%
	Final	40%	10%		final exam	50%
	The total	65%	35%		Total degree	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 6

1. Course Name:
Summer Field Crops
2. Course Code:
3. Semester / Year:
courses
4. Description Preparation Date:
29/2/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
140/140
7. Course administrator's name (mention all, if more than one name)
Name: Assist.Pro. Dr. Haider Abadi Nasser **Email: haider-alisawi@atu.edu.iq**
8. Course Objectives

Course Objectives	**Providing the student with information that enables him to know the processes of preparing the land and preparing it for growing summer crops, the appropriate method for planting each crop, the processes of serving all crops for the various stages of the plant and up to harvest, in addition to the transformational and classificati processes for the most important summer crops Iraq.**

9. Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it**	**Introduction to the goals and importance of producing summer**	**Lecture**	**Exam**

		correctly	field crops in the world and Iraq. Dividing crops according to daily use and planting dates.		
The Second	2	Understanding the topic and the ability to apply it correctly	Fertilization, types of fertilizers, the importance of using fertilizers for plants	Lecture	Exam
The Third	2	Understanding the topic and the ability to apply it correctly	Sunflower crop production, economic importance, suitable environmental conditions, crop service operations, growth stages.	Lecture	Exam
The Fourth	2	Understanding the topic and the ability to apply it correctly	Cotton crop production, economic importance, suitable environmental conditions, crop service operations, signs of maturity, cotton harvesting, ginning and baling, manufacturing processes	Lecture	Report + Evaluation
The Fifth	2	Understanding the topic and the ability to apply it correctly	Cotton crop production, economic importance, suitable environmental conditions, crop service operations, signs of maturity, cotton harvesting, ginning and baling, manufacturing processes	Lecture	Exam
The Sixth	2	Understanding the topic and the ability to apply it correctly	Yellow maize crop production, economic importance, suitable environmental conditions, crop service operations, maturity and harvest,	Lecture	Exam

			transformational processes		
The Seventh	2	Understanding the topic and the ability to apply it correctly	Rice crop production, economic importance, suitable environmental conditions, crop service operations, maturity and harvest.	Lecture	Exam
The Eighth	2	Understanding the topic and the ability to apply it correctly	Rice crop productio economic importanc suitable environmen conditions, crop serv operations, maturit and harvest.	Lecture	Exam
The Ninth	2	Understanding the topic and the ability to apply it correctly	Sesame crop production, econom importance, suitabl environmental conditions, crop serv operations, maturit and harvest, manufacturing processes.	Lecture	Exam
The tenth	2	Understanding the topic and the ability to apply it correctly	Production of pistachio and mung bean crops, economic importance, suitable environmental conditions, crop service operations, maturity and harvest.	Lecture	Report + Evaluation
Eleventh	2	Understanding the topic and the ability to apply it correctly	Soybean crop production, economic importance, suitable environmental conditions, crop service operations, maturity and harvest	Lecture	Exam
Twelveth	2	Understanding the topic and the ability to apply it correctly	Tobacco crop production, economic importance, appropriate environmental conditions, crop	Lecture	Exam

			service operations, maturity and harvest, drying leaves, and transformational processes.		
Thirteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Production of jute and jute crops, economic importance, suitable environmental conditions, crop service operations, maturity and harvest.**	**Lecture**	**Exam**
Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**White corn crop production, economic importance, suitable environmental conditions, crop service operations, maturity and harvest**	**Lecture**	**Exam**
Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Showing scientific films about the production of the most important summer crops.**	**Lecture**	**Exam**

11.Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance,

daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

2- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 7

1- Course Name:
Summer vegetable crops
2- Course Code:
3- Semester / Year:
courses
4- Description Preparation Date:
29/2/2024
5- Available Attendance Forms:
Mandatory
6- Number of Credit Hours (Total) / Number of Units (Total)
140/140
7- Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer. Raghad Khalil Ahmed **Email: raghad.ahmed.iku@atu.edu.iq**

8- Course Objectives

Course Objectives	**Providing the student with information that enables him to know the processes of preparing and preparing the appropriate bed for the seed whether in the nursery or the field, the best way to plant the crop, all operations of serving the crop during its growth stages, and the correct foundations in harvesting, sorting and marketi the fruits.**

9- Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**Agricultural cycle, its definition, types (two-way, three-way, four-way, five-way).**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**Potato production, place of origin, importance of the crop from an economic and nutritional standpoint, factors affecting its production, methods of reproduction, varieties, date and method of cultivation, service operations.**	**Lecture**	**Exam**
The Third	**2**	**Understanding the topic and the ability to apply it correctly**	**Tomato production, original habitat, economic and nutritional importance, plant division and varieties, climate and soil,**	**Lecture**	**Exam**

			reproduction, date and method of cultivation, service operations.		
The Fourth	2	Understanding the topic and the ability to apply it correctly	Solonum and pepper production, original habitat, economic and nutritional importance, plant division and varieties, climate and soil, reproduction, date and method of cultivation, service operations.	Lecture	Report + Evaluation
The Fifth	2	Understanding the topic and the ability to apply it correctly	Cucumber production, original habitat and importance, plant division and varieties, climate and soil, reproduction, flowers and sex ratio, date and method of cultivation, service operations.	Lecture	Exam
The Sixth	2	Understanding the topic and the ability to apply it correctly	Production of Pumpkin types of squash, original habitat and importance, botanical division and varieties, climate and soil, reproduction (zucchini squash, honey squash, anaki).	Lecture	Exam
The Seventh	2	Understanding the topic and the ability to apply it correctly	Watermelon and watermelon production, original habitat and importance, plant division and varieties, climate and soil, reproduction, dates and method of cultivation, service operations.	Lecture	Exam

The Eighth	**2**	**Understanding the topic and the ability to apply it correctly**	**Bean and cowpea production, original habitat and importan plant division and varieties, climate and soil, reproduction, da and method of cultivation, service operations.**	**Lecture**	**Exam**
The Ninth	**2**	**Understanding the topic and the ability to apply it correctly**	**Production of okra, maza, sweet corn, original habitat and importance, plant division and varieties climate and soil, reproduction, dates a method of cultivation service operations.**	**Lecture**	**Exam**
The tenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Basil and mentha production, original habitat and importance, plant division and varieties, climate and soil, reproduction, dates and method of cultivation.**	**Lecture**	**Report + Evaluation**
Eleventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Vegetables hoped to be grown in Iraq (artichoke, taro, gothic), origin and importance, date and method of cultivation, service operations.**	**Lecture**	**Exam**
Twelveth	**2**	**Understanding the topic and the ability to apply it correctly**	**Vegetables hoped to be grown in Iraq (artichoke, taro, gothic), origin and importance, date and method of cultivation, service operations.**	**Lecture**	**Exam**
Thirteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Growth regulators, division of growth regulators, physiological effect, ways to use growth regulators, recent studies on the use of growth regulators..**	**Lecture**	**Exam**

Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Intercropping, importance, farming models, dense farming, protective soil covers, advantages and disadvantages of protective covers**	**Lecture**	**Exam**
Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Mechanization of agricultural operations in vegetable fields, types of mechanization (tillage machines, fertilization machines, hoeing machines, harvesting machines).**	**Lecture**	**Exam**

11- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

2- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 8

1- Course Name:	
Deciduous Fruit trees	
2- Course Code:	
3- Semester / Year:	
courses	
4- Description Preparation Date:	
29/2/2024	
5- Available Attendance Forms:	
Mandatory	
6- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
7- Course administrator's name (mention all, if more than one name)	
Name: Assistant Lecturer. Haider Ali Abdul Hussein **Email: habdulhussein@atu.edu.iq**	
8- Course Objectives	
Course Objectives	**Providing the student with information that enables him to know how to choose the best method of propagation and cultivation of each and to perform all service operations during th different growing seasons and all appropriate environmental conditions for producing trees economically.**
9- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans

	(presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing studer education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**The importance of fruits and methods of classifying them, the economic and nutritional importance of deciduous fruits**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**The geographical distribution of deciduous fruits in Iraq and the Arab world, the most important problems of fruit production in Iraq and the role of resting buds**	**Lecture**	**Exam**
The Third	**2**	**Understanding the topic and the ability to apply it correctly**	**The theoretical foundations for establishing new fruit orchards, including the selection of the appropriate plot of land, preparation and preparation processes for planting**	**Lecture**	**Exam**
The Fourth	**2**	**Understanding the topic and the ability to apply it correctly**	**Grapes – habitat and distribution, geographical distribution, nutritional and economic value.**	**Lecture**	**Report + Evaluation**
The Fifth	**2**	**Understanding the topic and the ability to apply it correctly**	**Grapes - suitable environmental conditions (soil, climate), grape abundance, grape varieties**	**Lecture**	**Exam**
The Sixth	**2**	**Understanding the topic and the ability to apply it correctly**	**Figs - original habitat and distribution, nutritional and**	**Lecture**	**Exam**

			economic value, climate and suitable soil, varieties		
The Seventh	2	Understanding the topic and the ability to apply it correctly	Apples - original habitat and spread, nutritional and economic value, suitable climate and soil, varieties, propagation	Lecture	Exam
The Eighth	2	Understanding the topic and the ability to apply it correctly	Pears and quince - habitat and spread, nutritional and economic value, suita environmental conditions (soil, climate), propagation methods, varieties	Lecture	Exam
The Ninth	2	Understanding the topic and the ability to apply it correctly	Peaches - habitat and distribution, appropriate environmental nutritional value, pea groups, propagation methods, varieties	Lecture	Exam
The tenth	2	Understanding the topic and the ability to apply it correctly	Apricots – habitat and distribution, nutritional and economic value, suitable environment, propagation, varieties.	Lecture	Report + Evaluation
Eleventh	2	Understanding the topic and the ability to apply it correctly	Pears - original habitat, nutritional and economic value, suitable environment, propagation, varieties	Lecture	Exam
Twelveth	2	Understanding the topic and the ability to apply it correctly	Almonds and cherries - original habitat, nutritional and economic value, cherry clusters, suitable environment, propagation, varieties	Lecture	Exam
Thirteenth	2	Understanding the topic and the ability to apply it correctly	Pomegranates and persimmons - original habitat, nutritional and economic value, suitable	Lecture	Exam

			environment, propagation, varieties		
Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Pistachios, walnuts and pecans – their original habitat, nutritional and economic value, suitable environment, propagation, varieties**	**Lecture**	**Exam**
Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Modern trends in fruit production - the importance of hormones and areas of their use, the use of mechanization in orchards, the most important operations required after harvesting.**	**Lecture**	**Exam**

11- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical

lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.	
12- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 9

1- Course Name:	
Plant Breeding and improvement	
2- Course Code:	
3- Semester / Year:	
courses	
4- Description Preparation Date:	
29/2/2024	
5- Available Attendance Forms:	
Mandatory	
6- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
7- Course administrator's name (mention all, if more than one name)	
Name: Assistant Lecturer. Ali Sameer Mueen **Email: Ali.sameer.iku@atu.edu.iq**	
8- Course Objectives	
Course Objectives	**Providing the student with information that enables him to know how to choose the best method of reproduction and cultivation of each and to perform all service operations during th different growing seasons and all appropriate environmental conditions for producing crops economically. Providing the student with**

	information that enables him to know how to choose the best method of reproduction and cultivation of each and to perform all service operations during the different growing seasons and all appropriate environmental conditions f producing crops economically.

9- Teaching and Learning Strategies

Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**Introduction, the development of the science of plant breeding and improvement.**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**Objectives of plant breeding and improvement, improving production, improving quality, breeding for disease resistance, breeding for special traits.**	**Lecture**	**Exam**
The Third	**2**	**Understanding the topic and the ability to apply it correctly**	**Plant cell, its components, nucleus, chromosomes.**	**Lecture**	**Exam**
The Fourth	**2**	**Understanding the topic and the ability to apply it correctly**	**Types of cell divisions: normal divisions, meiosis, and double fertilization.**	**Lecture**	**Report + Evaluation**
The Fifth	**2**	**Understanding the topic and the ability to apply it correctly**	**Pollination in plants, self-pollination and its importance, cross-pollination and its importance.**	**Lecture**	**Exam**
The Sixth	**2**	**Understanding the topic and the**	**Mendel's laws in plant breeding and genetics, the first**	**Lecture**	**Exam**

		ability to apply it correctly	law (the law of isolation) and the second law (the law of free distribution)		
The Seventh	2	Understanding the topic and the ability to apply it correctly	Genetic changes, their importance, origins, and development.	Lecture	Exam
The Eighth	2	Understanding the topic and the ability to apply it correctly	Qualitative traits and their relationship to genetic factors. Quantitative traits an their relationship to genetic factors.	Lecture	Exam
The Ninth	2	Understanding the topic and the ability to apply it correctly	The relationship between the inheritar of traits and environmental conditions, the interaction between genetics and the environment in breeding and plant improvement.	Lecture	Exam
The tenth	2	Understanding the topic and the ability to apply it correctly	Soil and plant improvement methods, method of saving from similar environments, acclimatizing them, evaluating them.	Lecture	Report + Evaluation
Eleventh	2	Understanding the topic and the ability to apply it correctly	Selection method, individual selection, individual selection, quantitative selection, group selection.	Lecture	Exam
Twelveth	2	Understanding the topic and the ability to apply it correctly	Hybridization method, individual hybridization, pair hybridization, multiple hybridization.	Lecture	Exam
Thirteenth	2	Understanding the topic and the ability to apply it correctly	Creating genetic mutations, physical mutagens, and chemical mutagens.	Lecture	Exam
Fourteenth	2	Understanding the topic and the ability to apply it correctly	Genetics and development of varieties resistant to plant diseases.	Lecture	Exam

Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**The development of cytoplasmic sterility, its importance, and its use in plant breeding.**	**Lecture**	**Exam**

11- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

1- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 10

1- Course Name:
Seeds production
2- Course Code:
3- Semester / Year:
courses
4- Description Preparation Date:
29/2/2024
5- Available Attendance Forms:
Mandatory
6- Number of Credit Hours (Total) / Number of Units (Total)
140/140
7- Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer. Hussein Abdel Zahra Khalaf **Email: Hussein20@atu.edu.iq**
8- Course Objectives

Course Objectives	**Providing the student with information that enables him to lea how to raise all plants to produce seeds, conduct important test on seeds, and carry out seed certification operations.**
9- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**2**	**Understanding the topic and the ability to apply it correctly**	**Seed diagnosis, distinguishing between important seed types, seed drawing, seed components.**	**Lecture**	**Exam**
The Second	**2**	**Understanding the topic and the ability to apply it correctly**	**Samples and methods of obtaining them, sample definition,**	**Lecture**	**Exam**

			types of samples, sampling methods and machines used for that.		
The Third	2	Understanding the topic and the ability to apply it correctly	Hygiene examination, definition of hygiene, components of a hygiene sample, how to obtain percentages of sample components.	Lecture	Exam
The Fourth	2	Understanding the topic and the ability to apply it correctly	Examining germination, defining germination and its types, factors affecting the evaluation of seedlings, calculating the percentage of germination, and operating the relevant equipment.	Lecture	Report + Evaluation
The Fifth	2	Understanding the topic and the ability to apply it correctly	Examining germination, defining germination and its types, factors affecting the evaluation of seedlings, calculating the percentage of germination, and operating the relevant equipment.	Lecture	Exam
The Sixth	2	Understanding the topic and the ability to apply it correctly	Examining germination, defining germination and its types, factors affecting the evaluation of seedlings, calculating the percentage of germination, and operating the relevant equipment.	Lecture	Exam

The Seventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Vitality examination, the importance of selecting vitality, equipment and test materials used.**	**Lecture**	**Exam**
The Eighth	**2**	**Understanding the topic and the ability to apply it correctly**	**Humidity testing, typ of water in seeds, methods of measuri humidity, operatin devices.**	**Lecture**	**Exam**
The Ninth	**2**	**Understanding the topic and the ability to apply it correctly**	**Seed health examination, the importance of conducting the examination, metho for conducting it.**	**Lecture**	**Exam**
The tenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Scientific trip**	**Lecture**	**Report + Evaluation**
Eleventh	**2**	**Understanding the topic and the ability to apply it correctly**	**Seed transactions, chemically and biologically, the importance of chemical and biological materials, conducting testing and determining the equipment used for this.**	**Lecture**	**Exam**
Twelveth	**2**	**Understanding the topic and the ability to apply it correctly**	**Field inspection, the importance of field inspection, how to conduct it and determine the number of units, how to calculate percentages.**	**Lecture**	**Exam**
Thirteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Seed grading, the importance of seed grading, characteristics of the seeds used in grading, devices used for that.**	**Lecture**	**Exam**
Fourteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Showing scientific films and slides about the production of the most important seeds.**	**Lecture**	**Exam**

Fifteenth	**2**	**Understanding the topic and the ability to apply it correctly**	**Discussing reports.**	**Lecture**	**Exam**

11- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

5- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 11

1- Course Name:
2- Course Code:
3- Semester / Year:
Courses
4- Description Preparation Date:
29/2/2024
5- Available Attendance Forms:
Mandatory
6- Number of Credit Hours (Total) / Number of Units (Total)
140/140
7- Course administrator's name (mention all, if more than one name)
Name: **Email:**
8- Course Objectives

Course Objectives	
9- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
The Fifth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Sixth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Seventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Eighth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Ninth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The tenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
Eleventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Twelveth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Thirteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fourteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fifteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam

11- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

6- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 12

13- Course Name:	
14- Course Code:	
15- Semester / Year:	
Courses	
16- Description Preparation Date:	
29/2/2024	
17- Available Attendance Forms:	
Mandatory	
18- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
19- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
20- Course Objectives	
Course Objectives	
21- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

22- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**

23- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

7- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

24- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 12

25- Course Name:	
26- Course Code:	
27- Semester / Year:	
Courses	
28- Description Preparation Date:	
29/2/2024	
29- Available Attendance Forms:	
Mandatory	
30- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
31- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
32- Course Objectives	
Course Objectives	
33- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

34- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**

35- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

8- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

36- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 14

37- Course Name:	
38- Course Code:	
39- Semester / Year:	
Courses	
40- Description Preparation Date:	
29/2/2024	
41- Available Attendance Forms:	
Mandatory	
42- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
43- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
44- Course Objectives	
Course Objectives	
45- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

46- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
The Fifth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Sixth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Seventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Eighth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Ninth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The tenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
Eleventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Twelveth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Thirteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fourteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fifteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam

47- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

9- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

48- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 15

49- Course Name:	
50- Course Code:	
51- Semester / Year:	
Courses	
52- Description Preparation Date:	
29/2/2024	
53- Available Attendance Forms:	
Mandatory	
54- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
55- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
56- Course Objectives	
Course Objectives	
57- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

58- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**

59- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

10- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

60- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 16

61- Course Name:	
62- Course Code:	
63- Semester / Year:	
Courses	
64- Description Preparation Date:	
29/2/2024	
65- Available Attendance Forms:	
Mandatory	
66- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
67- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
68- Course Objectives	
Course Objectives	
69- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

70- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**

71- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

11- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

72- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 17

73- Course Name:	
74- Course Code:	
75- Semester / Year:	
Courses	
76- Description Preparation Date:	
29/2/2024	
77- Available Attendance Forms:	
Mandatory	
78- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
79- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
80- Course Objectives	
Course Objectives	
81- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

82- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
The Fifth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Sixth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Seventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Eighth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The Ninth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
The tenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Report + Evaluation
Eleventh	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Twelveth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Thirteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fourteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam
Fifteenth	1	Understanding the topic and the ability to apply it correctly		Lecture	Exam

83- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

12- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

84- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.

The Course 11

85- Course Name:	
86- Course Code:	
87- Semester / Year:	
Courses	
88- Description Preparation Date:	
29/2/2024	
89- Available Attendance Forms:	
Mandatory	
90- Number of Credit Hours (Total) / Number of Units (Total)	
140/140	
91- Course administrator's name (mention all, if more than one name)	
Name: **Email:**	
92- Course Objectives	
Course Objectives	
93- Teaching and Learning Strategies	
Strategy	**Education strategies** It includes a set of general rules and broad outlines that concern means of achiev the desired goals of teaching through advance planning and setting future plans (presentation - coordination - training - discussion), organizing the classro environment, and classroom management for the purpose of developing stude education. Learning strategies It includes the behaviors and procedures that students engage in that aim to influe how they are able to process information and learn different tasks. Learning strategic when students are aware of the special skills and strategies (spec procedures and methods) that they use in learning.

94- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Second	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Third	**1**	**Understanding the topic and the**		**Lecture**	**Exam**

		ability to apply it correctly			
The Fourth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
The Fifth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Sixth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Seventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Eighth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The Ninth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
The tenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Report + Evaluation**
Eleventh	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Twelveth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Thirteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fourteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**
Fifteenth	**1**	**Understanding the topic and the ability to apply it correctly**		**Lecture**	**Exam**

95- Course Evaluation

The student's evaluation in the educational program depends entirely on daily preparation, daily, oral, monthly and written exams and reports, noting that the passing grade is (50%) and according to the following mechanism:

13- The grade for the annual subjects is divided into two parts (50% pursuit and 50% final). The division between practical and theoretical is shown in the table below:

Article containing my work				**Article that does not contain my work**		
The exam		**Theoretical**	**Practical**	**The exam**		**Theoretical**
Pursuit	**First month exam**	10%	10%	**Pursuit**	**First month exam**	20%
	Second month exam	10%	10%		**Second month exam**	20%
	Evaluation*	5%	5%		**Evaluation***	10%
	Final	40%	10%		**final exam**	50%
	The total	65%	35%		**Total degree**	100%

* Evaluation is done by the subject teacher and depends on the student's attendance, daily exams, homework, and behavior during the lecture.

2- Graduation research for second year students based on writing a scientific research and discussion.

In addition to continuous monitoring of the student's attendance at the theoretical lecture and laboratory, the student is considered not to have completed the subject if his hours of absence exceed 10% of the total hours for that subject.

96- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of basics of plant diseases - Book of how to become a beekeeper - Book of soil fertility and plant nutrition - Book of garden insects - Book of the botanist - Book of plant biotechnology
Main references (sources)	First: peer-reviewed scientific journals. Second: Academic books. Third: Websites. Fourth: Scientific encyclopedias. Fifth: Scientific research.
Recommended books and references (scientific journals, reports...)	Methodical books - educational portfolios - laboratories - summer training.
Electronic References, Websites	Agricultural websites.