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

A form describing the academic program for the faculties For the school year 2021 - 2022

University name : Southern Technical University
Overall name of : Technical / Shatrah Institute
Scientific Department : Department of Plant Production Techniques
Date of filling file2022/ 8 / 1 :

Department Head Name : Eng. Muhammad Bustan Hanoon Name of the Associate Dean for Scientific Affairs : Turkish Diwan Hussein
date : date:
signature : signature:

The file has already been checked
Department of Quality Assurance and University Performance
Name of the Director of the Department of Quality Assurance and University Performance :Mortada Abdel Karim
History
Signature
Dean's endorsement

Academic Program Description

This academic program description provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available opportunities . It is accompanied by a description of each course within the program

Ministry of Higher Education and Scientific Research	1. Educational institution
Technical Institute / Shatra	2. Scientific Department / Center
Department of Plant Production Techniques	3. Academic or professional program name
Technical Diploma	4. Final certificate name
semester system	5. school system
Theoretical and practical study	6. Accreditation Program approved
Laboratories ، field field, library, internet, agricultural and industrial institutions and agricultural projects	7. Other external influences
2021	8. Description creation date
9. The objectives of the academic program : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena	
1. Knowledge and understanding of agricultural sciences related to plant production sciences and related local, regional and international standards	
2. Scientific skills that enable prediction, evaluation and clarification of the importance of field and horticultural crops in their interaction with other living organisms or with their environment	
3. Thinking and analysis skills that enable solving emerging problems in the field of agricultural sciences in the field of agriculture and basic sciences, according to local, regional and international standards.	
4. Skills to use and self-development that enable him to compete with others in the labor market	

10.Required program outcomes and methods of teaching, learning and assessment
A -Cognitive goals A1- Communicating the acquired information related to the agricultural field to the beneficiaries and linking it with other sciences to reach a solution to the problems related to the various agricultural operations. A2 -Acquisition and proof Efficiency in a Maha ra t laboratory Specialized Titles for its For for the application of in a Research vegetarianism. A3- Demonstrate the ability to analyze experimental measurements related to the specialization of plant production and the accuracy of preparing reports on observations and analysis. A4- Clearly communicate and discuss scientific concepts, empirical results and analytical arguments, orally and in writing. A5 - Develop appropriate technology to solve farmers' problems and encourage research aimed at progress in all disciplines for long-term technical development. A - 6 Attracting qualified and talented scientific cadres to conduct scientific research at the Institute. A 7- To deliver knowledge and technology to farmers and farmers on a larger scale through training workers and officials of the agricultural administration on recent developments in all fields through specialists.
B - Skills objectives of the program B - 1 conduct laboratory and field trials, as well as a statistical analysis and interpretation of data results. B - 2 Preparing and submitting agricultural research reports. B - 3 communication with professionals and non - professionals involved in agricultural cooperation and the private sector. B-4 - Developing and using computer programs in the fields of designing and analyzing agricultural experiments.
Teaching and learning methods
- Providing students with the basics and additional topics related to previous learning outcomes of skills ، to solve practical problems. - Applying the topics studied in theory on a practical level. - Asking students, during practical lessons, to conduct some applied research and under the supervision of their professors. - Visiting practical laboratories by the academic staff.
Evaluation methods
- Daily and monthly exams - Semester and final exams - Participation scores for competition questions for academic subjects -Scores for homework and report writing

C -Emotional and value goals
C1 -Applying knowledge in agricultural sciences in order to address agricultural problems.
C2 - Design and implementation of agricultural scientific experiments, as well as analysis and interpretation of data.
C3 - Designing an integrated or partial agricultural system or following a treatment system to meet the required agricultural needs within realistic constraints related to the economy, environment, health and safety.
C -4 Demonstrating the creative and innovative ability in plant protection and finding agricultural solutions in the field of formulating some designs related to plants.
C5 - Use of modern techniques, skills and tools necessary for agricultural technical practices.

d -Transferred general and rehabilitative skills) other skills related to employability and personal development. (
D1 -Diagnose, formulate and address agricultural problems.
D 2 - Enable students to pass job interviews.
D3 - Enable students to pass professional exams organized by local, regional and international bodies.
D 4 - To enable students to develop continuous self-development after graduation.

12.Certifications and Credit Hours	11.Program Structure			
	Credit hours	Course or course name	Course or course code	level/year
The degree of the Technical Diploma Require (x) credit hours				second 2021
128				

13.Planning for personal development

- Enable requester From Use skills Empowerment self
- Ability On Analysis and give Instructions
- skills Solve problems the operation

- Knowledge and understanding
- education students From Use Planning and implement engineering Gardens
- education students to prepare fields vegetables and conduct Processes Agriculture
- education students planting trees the fruit Always evergreen and consistent papers and conduct operations the service
- education students a lot the plants by roads modern to multiply the plants by farming histological
- education students a lot the plants seed and green in a canopy vegetarian education students On Agriculture vegetables in a houses plastic in a Agriculture protected

14.Acceptance criterion) Od p regulations relating to attend the college or institute(

Central / according to the requirements of the Ministry of Higher Education and Scientific Research

15.The most important sources of information about the program

.1The Central Library in the Covenant
.2Internet information network
.3The experiences of Arab and international universities
.4Current Curriculum

Curriculum Skills Outline

e boxes corresponding to the individual learning outcomes from the program being evaluated

comes required from the program													
ng skills		**Subject-specific skills**				**knowledge and understanding**				**Basic mother optional**	**Course Name**	**Course Code**	**year / level**
c2	**c1**	**b4**	**b3**	**b2**	**b1**	**A4**	**A3**	**A2**	**A1**				
√			√				√			**Basic**	**protected cultivation**	**PPT201**	**2021**

√			√				√				Plant breeding and improvement	**PPT209**	**/the second**
		√				√					seed production	**PPT207**	**2021 /the second**
		√				√					plant diseases	**PPT208**	
		√				√					Tissue and plant cell culture		**2021 /the second**
			√				√				fall fruit production	**PPT205**	
		√	√			√	√				irrigation and salinity	**PPT202**	**2021 /the second**
		√				√					calculator apps	**PPT202**	

n course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	1. Educational institution
Department of Plant Production Techniques	2. Scientific Department / Center
protected cultivation / **Protected Agriculture**	3. Course name / code
Blended/ present and e -learning	4. Available forms of attendance
Autumn semester / second stage	5. season / year
2 3hours per semester theoretical and practical	6. Number of hours of study) total(
	7. The date this description was prepared

8. Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.

9. Course outcomes and methods of teaching, learning and assessment

A - cognitive goals

A -1 Teaching students how to construct tunnels and greenhouses and the required climatic conditions.

A - 2 Introducing students to how to develop greenhouses so that they are able to describe and service them of all kinds.

A -3 Enable the student to know how to deal with vegetable crops that can be produced under protected agricultural conditions.

B - Skills objectives of the program

B - 1 To provide the student with the skills of applying scientific methods with regard to managing greenhouses.

B - 2 Training students to produce vegetables in greenhouses to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct laboratory tests related to vegetables and soil and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

10. Course structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	The importance of production in the conditioned environment, the reality and future of production, factors for developing production in the conditioned environment.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	The foundations of constructing tunnels and houses, choosing the site, setting up fenders, geographical direction, area and shape, preparing the site, planning the site.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	Design of protected agricultural facilities - design of ponds, plastic tunnels, greenhouses, specifications of plastic covers and glass covers.	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Characteristics of climatic conditions inside the protected cultivation facility - temperature in ponds, tunnels and houses, light, humidity, gases inside ponds, tunnels and houses.	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Methods of controlling climatic conditions inside protected agricultural facilities - heating, cooling, ventilation, deflection, gas supply Co_2	My knowledge and skills	1theoretical 3 practical	Fifth
Mini Lesson Discussion Practical	Lecture and practical lesson	Production of seedlings of horticultural crops inside the air-conditioned	My knowledge and skills	1theoretical 3 practical	VI

Exercise and Workgroups		environment - production of vegetable seedlings, production of ornamental seedlings that reproduce by seed and vegetatively, production of seedlings of fruit that reproduce by seed and vegetatively.			
Case study Practical exercise and work groups	Lecture and practical lesson	Cultivation of plants of the cabbage family in the air-conditioned environment - tomato cultivation (climatic needs, varieties, date and method of cultivation, service operations.(	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Cultivation of plants of the cabbage family in the air-conditioned environment - cultivation of peppers and eggplants (climatic needs, varieties, date and method of cultivation, service operations.(	My knowledge and skills	1theoretical 3 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Cultivation of plants of the cucurbit family in the air-conditioned environment - cultivation of cucumbers, squash squash, sophistication (climate, varieties, date and method of cultivation, service operations.(	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Cultivation of melons, beans, okra in the air-conditioned environment (climate, varieties, date and method of cultivation, service operations.(	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Mushroom cultivation (climate, plant division and breeds, preparation of the nutrient medium, production of	My knowledge and skills	1theoretical 3 practical	eleventh

		blackboards, date and method of cultivation, service operations.(			
Practical exercise and workgroups	Lecture and practical lesson	Cultivation of cut flowers and shade plants in the air-conditioned environment, cultivation of carnations, cladeus, tulips, daudis, rib cage, rubber, asparagus (climate, varieties, date and method of cultivation, service operations. (	My knowledge and skills	1theoretical 3 practical	twelfth and thirteenth
ask questions	Lecture and practical lesson	Soilless cultivation and irrigation and fertilization systems within the air-conditioned environment - definition of soilless cultivation, preparation of the nutrient solution, methods of cultivation without soil, irrigation and fertilization system in the air-conditioned environment.	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Optimal exploitation of protected agricultural facilities and intercropping in the protected environment - the system of succession of vegetable crops in tunnels and greenhouses and greenhouses .Studies on intercropping in the air-conditioned environment.	My knowledge and skills	1theoretical 3 practical	Fifteenth

11. Infrastructure	
Protected Agriculture System Book	.1Required course books
Supporting resources for each course	.2Main references) sources(

Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

12. course development plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Breeding and improvement of plant / **Plant Breeding and improvement**	.3Course name / code
presence education	.4Forms of attendance available
Autumn semester / second stage	.5Semester / year
32hours of theoretical and practical class	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	

A - cognitive goals

A -1 Teaching students how to choose the best method of reproduction and cultivation for each crop.

A - 2 Introducing students to how to develop service operations during the growing seasons so that they are able to describe them in their various types.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 To provide the student with the skills of applying scientific methods with regard to plant breeding.

B - 2 Training the student to produce crops using appropriate breeding methods to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct laboratory tests related to plants and soil and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(

D-1

D-2

D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Introduction, development of science of breeding and improvement of plants.	My knowledge and skills	2theoretical 2 practical	the first
ask questions	Lecture and practical lesson	The objectives of plant breeding and improvement, improving production, improving quality, breeding for disease resistance, breeding for special traits.	My knowledge and skills	2theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	Plant cell, its components, nucleus, chromosomes.	My knowledge and skills	2theoretical 2 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Types of cell divisions, normal divisions, meiosis, double fertilization.	My knowledge and skills	2theoretical 2 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Pollination in plants, self-pollination and its importance, cross-pollination and its importance.	My knowledge and skills	2theoretical 2 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Mendel's laws of plant breeding and heredity, the first law (law of segregation) and second law (law of free distribution(	My knowledge and skills	2theoretical 2 practical	VI
Case study Practical exercise and work	Lecture and practical lesson	Genetic changes, their importance, their genesis, their	My knowledge and skills	2theoretical 2 practical	seventh

groups		development.			
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Qualitative traits and their relationship to genetic factors, quantitative traits and their relationship to genetic factors.	My knowledge and skills	2theoretical 2 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	The relationship between the heredity of traits and environmental conditions, the overlap between heredity and the environment in breeding and plant improvement.	My knowledge and skills	2theoretical 2 practical	ninth
Ask group work questions	Lecture and practical lesson	Soil methods and plant improvement, method of saving from similar environments, adapted, evaluated.	My knowledge and skills	2theoretical 2 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Method of election, individual selection, individual selection, quantitative selection, aggregate selection.	My knowledge and skills	2theoretical 2 practical	eleventh
Practical exercise and workgroups	Lecture and practical lesson	Method of cross-breeding, single cross-crossing, pair-crossing, multiple cross-breeding.	My knowledge and skills	2theoretical 2 practical	twelveth
ask questions	Lecture and practical lesson	Genetic mutations, physical mutagens, chemical mutagens.	My knowledge and skills	2theoretical 2 practical	Thirteenth
Asking	Lecture	Inheritance and	My	2theoretical 2 practical	fourteenth

practice questions	and practical lesson	development of varieties resistant to plant diseases.	knowledge and skills		
Asking practice questions	Lecture and practical lesson	Development of cytoplasmic sterility, its importance, its use in plant breeding.	My knowledge and skills	2theoretical 2 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
The systematic book of plant breeding and improvement	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
seed production / **Seeds production**	.3Course name / code
presence education	.4Forms of attendance available
Autumn semester / second stage	.5Semester / year
32hours of theoretical and practical class	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	

A - cognitive goals

A -1 Teaching students how to identify the method of raising each plant to produce seeds.

A -2 Introducing students to how to conduct important tests for seeds so that he is able to describe them of their various types.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 To provide the student with the skills of applying scientific methods with regard to the examination of seeds so that he will be able to multiply them by modern methods such as plant tissue cultivation.

B - 2 Training the student to carry out seed certification processes to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct laboratory tests related to seeds and soil and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(

D-1

D-2

D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	The concept of seeds, the importance of seeds, a brief history of seed production.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	Don't change.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	Methods of raising self-pollinated crops (import, selection, hybrid production.(	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Methods of breeding mixed-pollinated crops (import, selection, cross-breeding, hybrid production.(	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Certification of seeds, the importance of seed certification, stages of seed production	My knowledge and skills	1theoretical 3 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	**Genetic principles, causes of low genetic purity, factors that help maintain genetic purity.**	My knowledge and skills	1theoretical 3 practical	VI
Case study Practical exercise and work groups	Lecture and practical lesson	Agricultural principles of seed production.	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions	Lecture and practical lesson	Field Inspection (Conditions and Objectives) Field Inspector Specifications.	My knowledge and skills	1theoretical 3 practical	VIII

and work groups					
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Dormancy in seeds causes and treatment.	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Production of wheat seeds, rice.	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	yellow corn seed production	My knowledge and skills	1theoretical 3 practical	eleventh
Practical exercise and workgroups	Lecture and practical lesson	Production of cotton seeds, sugar beet.	My knowledge and skills	1theoretical 3 practical	twelveth
ask questions	Lecture and practical lesson	Production of solanaceous family seeds (tomatoes, eggplants, peppers.(	My knowledge and skills	1theoretical 3 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Production of seeds of the cucurbit family (pumpkin, watermelon, and soybean.(	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Production of cruciferous family seeds (Lahana, cauliflower.(	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
The systematic book seed production	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
plant diseases / **Plant Diseases**	.3Course name / code
presence education	.4Forms of attendance available

Autumn semester / second stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	
A - cognitive goals A -1 Teaching students how to deal with diseases caused by viruses, snakes, deficiency of elements and ways of transmission. A -2 Introduce the students to the parasitic flowering plants. A -3 Enable the student to know how to deal with laboratory materials and equipment.	
B - Skills objectives of the program B - 1 To provide the student with the skills of applying scientific methods with regard to disease prevention. B - 2 Training the student to treat diseases to achieve crop protection and high productivity. B - 3 To provide the student with the necessary skills to conduct laboratory tests related to plant and soil diseases and how to give appropriate scientific judgments.	
Teaching and learning methods	
Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.	
Evaluation methods	
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams	

C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers. C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Classification of plant diseases according to the pathogen, symptoms and factor.	My knowledge and skills	1theoretical 2 practical	the first
ask questions	Lecture and practical lesson	Plant diseases caused by algae, their characteristics, symptoms and ways to combat them.	My knowledge and skills	1theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	Non-parasitic diseases, their causes, symptoms, nitrogen deficiency, potassium, phosphorous, magnesium, sulfur, iron, zinc deficiency.	My knowledge and skills	1theoretical 2 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Supplementing the symptoms of deficiency of elements, element boron, manganese, copper, monidium.	My knowledge and skills	1theoretical 2 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Plant diseases resulting from irregular irrigation, high ground water level, flowering end rot on tomato fruits and ruqyi, fruit trees with stone cores.	My knowledge and skills	1theoretical 2 practical	Fifth
Mini Lesson Discussion Practical Exercise and	Lecture and practical lesson	Methods of plant disease resistance (agricultural, biological and chemical methods	My knowledge and skills	1theoretical 2 practical	VI

Workgroups		(mercury bacterial pesticides, antibiotics) plant breeding and improvement.			
Case study Practical exercise and work groups	Lecture and practical lesson	Mycotoxins produced by some fungi that infect grains, fruits and foodstuffs.	My knowledge and skills	1theoretical 2 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Showing scientific films about the most common diseases	My knowledge and skills	1theoretical 2 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Mycoplasma as pathogens of plant diseases, its characteristics, the most important diseases caused by it, its symptoms, its life cycle, and ways to combat it.	My knowledge and skills	1theoretical 2 practical	ninth
Ask group work questions	Lecture and practical lesson	Plant pathogenic bacteria.	My knowledge and skills	1theoretical 2 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Plant viruses, virus forms, chemical composition of grass.	My knowledge and skills	1theoretical 2 practical	eleventh
Practical exercise and workgroups	Lecture and practical lesson	General diseases of viral diseases.	My knowledge and skills	1theoretical 2 practical	twelveth
ask questions	Lecture and practical lesson	Factors predisposing to plant diseases.	My knowledge and skills	1theoretical 2 practical	Thirteenth
Asking practice questions	Lecture and practical	Fungi - characteristics of fungi, ways of feeding fungi,	My knowledge and skills	1theoretical 2 practical	fourteenth

	lesson	ways of reproduction of fungi, division of fungi.			
Asking practice questions	Lecture and practical lesson	Snakeworms as causative agents of plant diseases - Structure of the nematode's body, the type of damage it causes.	My knowledge and skills	1theoretical 2 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
Plant pathology textbook	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

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Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Tissue culture and plant cells/ **TC& Plant Cell**	.3Course name / code
presence education	.4Forms of attendance available
Autumn semester / second stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	

.9Course outcomes and methods of teaching, learning and assessment

A - cognitive goals

A -1 Teaching students the importance of plant tissue culture.

A -2 Introducing students to the role of growth regulators in cell division and differentiation in tissue culture.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 providing students with the skills of propagation histologically plants.

B - 2 Training the student in the manufacture of culture media and the tissue propagation of plants to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct laboratory tests related to tissue culture and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(

D-1

D-2

D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Terms used in the subject of plant cell and tissue culture- oral meristem- callus cell file- nutritional medium- protoplast- cellular differentiation- cellular fusion- anther culture- cell cryopreservation	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	The importance of plant cell and tissue culture in increasing agricultural production.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	The role of growth regulators in cell division and differentiation.	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	The importance of tissue culture in plant breeding and improvement(1)	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	The importance of tissue culture in plant breeding and improvement.	My knowledge and skills	1theoretical 3 practical	Fifth
Mini	Lecture	The importance	My	1theoretical 3 practical	VI

Lesson Discussion Practical Exercise and Workgroups	and practical lesson	of tissue culture in the production of medical drugs.(2)	knowledge and skills		
Case study Practical exercise and work groups	Lecture and practical lesson	The importance of tissue culture in the production of medical drugs.(1)	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Root grafting with plant tissue.	My knowledge and skills	1theoretical 3 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Cultivation and production of callus.	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Production and growth of cell suspension.	My knowledge and skills	1theoretical 3 practical	tenth and eleventh
Mini-lesson work groups	Lecture and practical lesson	Preservation of plant tissues by freezing.	My knowledge and skills	1theoretical 3 practical	twelveth
Practical exercise and workgroups	Lecture and practical lesson	Production of virus-free plants.	My knowledge and skills	1theoretical 3 practical	Thirteenth
ask questions	Lecture and practical lesson	The use of root knot bacteria in tissue culture.	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Growth measurements of transplanted organs and	My knowledge and skills	1theoretical 3 practical	Fifteenth

		tissues.			

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
Textbook of tissue and plant cell culture	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Production Deciduous fruit/ **Deciduous Fruit trees**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	

A - cognitive goals

A - 1 Teaching students how to deal with the most important varieties of fallen leaves ،methods of their management, factors affecting their productivity and the extent of the success of their cultivation in Iraq.

A -2 Introducing students to how to develop the cultivation of fruit trees so that they are able to describe and serve them in their various types.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 providing students with the skills of applying scientific methods in terms of management of fruit trees pain leaves hair loss.

B - 2 Training the student on the correct foundations in picking, sorting and marketing the fruits to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct laboratory tests related to fruits and soil and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(

D-1

D-2

D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	The importance of fruits and methods of their classification, the economic and nutritional importance of fallen fruits	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	Geographical distribution of fallen fruits in Iraq and the Arab world, the most important problems of fruit production in Iraq and the role of rest in buds.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	Theoretical foundations for establishing new orchards and ensuring the selection of the appropriate plot of land, preparation processes and preparations for planting	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Grapes - Habitat and distribution, geographical distribution, nutritional and economic value	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Grapes - suitable environmental conditions (soil, climate) Grape multiplication, grape varieties	My knowledge and skills	1theoretical 3 practical	Fifth
Mini Lesson Discussion Practical	Lecture and practical lesson	Figs - origin and spread, nutritional and economic value, suitable climate	My knowledge and skills	1theoretical 3 practical	VI

Exercise and Workgroups		and soil, varieties			
Case study Practical exercise and work groups	Lecture and practical lesson	Apple - the origin and spread, nutritional and economic value, suitable climate and soil, varieties, propagation	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Pear and quince - Habitat and spread, nutritional and economic value, appropriate environmental conditions (soil, climate), propagation methods, varieties	My knowledge and skills	1theoretical 3 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Peach - Habitat and propagation, nutritional value appropriate to the environment, groups of peaches, methods of propagation, varieties	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Apricot - habitat and spread, nutritional and economic value, suitable environment, propagation, varieties	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Pears - the original home, nutritional and economic value, appropriate environment, multiplication, varieties	My knowledge and skills	1theoretical 3 practical	eleventh
Practical exercise and workgroups	Lecture and practical	Almonds and cherries - the original home,	My knowledge and skills	1theoretical 3 practical	twelveth

	lesson	nutritional and economic value, cherry groups, suitable environment, propagation, varieties			
ask questions	Lecture and practical lesson	Pomegranate and persimmon - the original home, the nutritional and economic value, the appropriate environment, the multiplication, the varieties	My knowledge and skills	1theoretical 3 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Pistachios, walnuts and pecans - their original home, nutritional and economic value, suitable environment, multiplication, varieties	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Recent trends in fruit production - the importance of hormones and areas of use, the use of mechanization in orchards, the most important operations required after harvest	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.
.12Infrastructure

syllabus for the production of fallen fruit	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
irrigation and soil salinity/ Soil Salinity& Irrigation	.3Course name / code
presence education	.4Forms of attendance available
Autumn semester / second stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description

.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.

.9Course outcomes and methods of teaching, learning and assessment

A - cognitive goals

A - 1 Teaching students to know the irrigation methods and systems used in irrigating fields.

A -2 Introducing students to methods of resistance or coexistence with salinity in the soil.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 providing students with the skills levels of salinity in the measurement of water and soil.

B - 2 Training the student to understand and diagnose different types of salts in the soil bed to reach high productivity.

B - 3 To provide the student with the necessary skills to conduct general examinations related to soil salinity and how to give appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Definition of irrigation, the importance of irrigation, the role of irrigation in the success of the farming process	My knowledge and skills	1theoretical 2 practical	the first
ask questions	Lecture and practical lesson	Irrigation methods, types of irrigation	My knowledge and skills	1theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	Water used for irrigation, factors affecting the suitability of irrigation water	My knowledge and skills	1theoretical 2 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Transfer of irrigation water into the soil trough, the effect of irrigation water quality on soil salinization	My knowledge and skills	1theoretical 2 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Means of delivering irrigation water to the fields, and methods of water storage (dams, reservoirs ... etc(.	My knowledge and skills	1theoretical 2 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Assessment of irrigation water quality according to different classifications	My knowledge and skills	1theoretical 2 practical	VI
Case study Practical exercise and work groups	Lecture and practical lesson	Definition of soil salinity, the spread of salt-affected soils in Iraq, the Arab world and the world	My knowledge and skills	1theoretical 2 practical	seventh

Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Sources of salts in soils, common types of salts in soils affected by salts	My knowledge and skills	1theoretical 2 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Primary salinization and secondary salinization	My knowledge and skills	1theoretical 2 practical	ninth
Ask group work questions	Lecture and practical lesson	The movement of reform and its distribution on the ground	My knowledge and skills	1theoretical 2 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Soil salinity balance, the effect of salts on soil properties (morphological, chemical, biological(	My knowledge and skills	1theoretical 2 practical	eleventh
Practical exercise and workgroups	Lecture and practical lesson	Classification of salt-affected soils in different classification systems (American, Russian, French(	My knowledge and skills	1theoretical 2 practical	twelveth
ask questions	Lecture and practical lesson	The effect of increasing salt in the soil on growing plants (direct and indirect(	My knowledge and skills	1theoretical 2 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Coexistence with salinity, methods of coexistence, cultivation of salt affected soils	My knowledge and skills	1theoretical 2 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Choosing suitable crops for salt-affected soils, classifying plants and the	My knowledge and skills	1theoretical 2 practical	Fifteenth

		effect of their production according to their tolerance to salinity, fertilizing salt-affected soils			

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
Irrigation and soil salinity textbook	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of

the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Garden decoration and engineering / **Fporiculture and Landscap**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Phase	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	

.9Course outcomes and methods of teaching, learning and assessment
A - cognitive goals A -1 Teaching students to understand the most important ornamental plants grown in gardens. A -2 Introducing students to the ways of propagating different ornamental plants. A -3 Enable the student to know how to deal with laboratory materials and equipment.
B - Skills objectives of the program B - 1 To provide the student with the skills of making different models of gardens and the basis for distributing plants in them. B - 2 Training the student on the propagation of ornamental plants to reach high productivity. B - 3 To provide the student with the necessary skills for gardening and how to give

appropriate scientific judgments for their quality.
Teaching and learning methods
Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.
Evaluation methods
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams
C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers. C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Ornamental plants and garden engineering, the division of ornamental plants and their importance.	My knowledge and skills	2theoretical 2 practical	the first
ask questions	Lecture and practical lesson	Trees and shrubs (their importance, uses in landscaping, products of trees and shrubs, distinguishing them from herbs(	My knowledge and skills	2theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	Hedges and climbers (their importance and uses in landscaping, products of fences and climbers, distinguishing them from herbs(	My knowledge and skills	2theoretical 2 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Flower bulbs (the importance of bulbs, appropriate environmental conditions, storage and care of bulbs.	My knowledge and skills	2theoretical 2 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Herbaceous ornamental plants (division of herbal ornamental plants, suitable flowers in landscaping, classification of daudis and carnations.(	My knowledge and skills	2theoretical 2 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Aromatic medicinal plants.	My knowledge and skills	2theoretical 2 practical	VI

Case study Practical exercise and work groups	Lecture and practical lesson	Shade plants and indoor coordination.	My knowledge and skills	2theoretical 2 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Aquatic, semi-aquatic, succulent and succulent plants (defining aquatic, semi-aquatic and succulent plants and their uses, dividing succulent and succulent plants according to their forms and the nature of their growth and use in coordination.(	My knowledge and skills	2theoretical 2 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Green areas (definition of green areas, importance and use, types of thal spread in gardens, division, maintenance of green areas.(	My knowledge and skills	2theoretical 2 practical	ninth
Ask group work questions	Lecture and practical lesson	Gardens and basic design systems, (a historical overview of the spread of gardens/the importance of gardens, methods of garden design, the historical development of garden engineering and design.(	My knowledge and skills	2theoretical 2 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Planning Elements (General Rules for Landscaping) The basic planning elements include activity - unity, balance,	My knowledge and skills	2theoretical 2 practical	eleventh

		proportions, thorns - isolation / garden facilities.			
Practical exercise and workgroups	Lecture and practical lesson	Landscaping with special characteristics (botanical gardens, zoos, squares and street gardens(	My knowledge and skills	2theoretical 2 practical	twelveth
ask questions	Lecture and practical lesson	The stages of designing and implementing the garden (the stage of a comprehensive survey of the garden, identifying problems and solutions, identifying how to plan and implement the gardens.(	My knowledge and skills	2theoretical 2 practical	thirteen and fourteen
Asking practice questions	Lecture and practical lesson	Show scientific films.	My knowledge and skills	2theoretical 2 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
Curriculum book decoration and garden architecture	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific

	journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Forage and pasture crops / **Forage crops**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	

.9Course outcomes and methods of teaching, learning and assessment

A - cognitive goals
A1 - Teaching students to understand the importance of forage crops.
A -2 Introducing students to the appropriate stages of cutting plants and presenting them to animals.
A -3 Enable the student to know how to deal with equipment in laboratories and others.

B - Skills objectives of the program
B - 1 providing students with the skills of the preparation of mixtures of forage.
B - 2 Training the student to work on the exploitation of natural pastures to reach high productivity.
B - 3 Providing the student with the necessary skills to estimate the suitability of a particular plant for cultivation as a fodder crop and how to give the appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes
Conducting monthly exams
Conducting semester and final exams

C - emotional and value goals.
C -1 To enable the student to apply theoretical information in a practical way.
C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.
C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.
C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	The importance of livestock, the importance of fodder crops and their role in meeting the needs of livestock feed, and the reality of cultivating fodder crops in Iraq.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	Factors affecting fodder production and its tendency, the exploitation of saline and wet lands in the production of fodder crops.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	Production of leguminous fodder crops (1) (Jet) Economic importance, appropriate environmental conditions, production of jet seeds.	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	) - (2)Alfalfa) the same vocabulary as the jet.	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	) - (3)Al-Hartman, Al-Kurt, Al-Kakuz) is the same as the previous vocabulary.	My knowledge and skills	1theoretical 3 practical	Fifth
Mini	Lecture	Production of grass fodder crops (1)	My	1theoretical 3 practical	VI

Lesson Discussion Practical Exercise and Workgroups	and practical lesson	yellow corn, including its economic importance, appropriate environmental conditions, production bases, and its fodder uses.	knowledge and skills		
Case study Practical exercise and work groups	Lecture and practical lesson	) - (2)Sorghum, Sudanese hashish) the same as the previous terms with mentioning the species belonging to the genus Sorgm .**Soryhum** ،(the danger of green feeding on animals as a result of poisoning with hydrocyanic acid)**HCN**. (	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	) -(3)Barley, oats, millet) economic importance, production bases, types used for fodder, exploitation for fodder.	My knowledge and skills	1theoretical 3 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Concentrated feed materials, their importance in animal nutrition, their sources, their content of nutrients (chemical composition.(	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Feed mixtures, definition, importance, types, basic elements of the forage mixture.	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Dredging, definition, its importance in feeding animals, why do we resort to making straws, determining the appropriate time for cutting according to the stages of growth, drying	My knowledge and skills	1theoretical 3 practical	eleventh

		methods, types of loss of the fodder material during hay making.			
Practical exercise and workgroups	Lecture and practical lesson	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 nutritional value loss as a result of preservation.	My knowledge and skills	1theoretical 3 practical	twelveth
ask questions	Lecture and practical lesson	Pastures, definition, importance, types.	My knowledge and skills	1theoretical 3 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Basis of quantitative evaluation of pasture plants, determination of pasture productivity	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	Causes of deterioration of natural pastures, methods of improving natural pastures and how to preserve them.	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
The systematic book forage crops and pastures	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and

	references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
care and storage / **Post-Harvest Crops**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	

.9Course outcomes and methods of teaching, learning and assessment
A - cognitive goals A -1 Teaching students about the most important methods of sorting, grading and packing fruits A -2 Introducing students to the most important methods of industrial maturation.
B - Skills objectives of the program B - 1 To provide the student with the skills of storing and cooling fruits and how to conduct them. B - 2 Training the student on the skills of dealing with the chemicals that are added to the fruits for the purpose of storing them. B - 3 To provide the student with the necessary skills to preserve fruits in healthy and safe ways for human use.
Teaching and learning methods
Giving scientific and theoretical lectures through display screens, PowerPoint and slides.
Evaluation methods
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams
C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers. C - 4 Develop the ethics of the human rights profession among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers lesson	Lecture and practical lesson	The importance of storing fruits and vegetables, the general principles used in storage،	My knowledge and skills	1theoretical 2 practical	the first
ask questions	Lecture and practical lesson	Stages of fruit growth and development, fruit care before picking and after picking	My knowledge and skills	1theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	Chemical components of fruits and vegetables, nutritional and medicinal value of fruits and vegetables	My knowledge and skills	1theoretical 2 practical	the third
And meet and work groups	Lecture and practical lesson	Biochemical changes during the growth and development stages of fruits, environmental influences on fruits before picking	My knowledge and skills	1theoretical 2 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Chemical changes of horticultural crops after harvest	My knowledge and skills	1theoretical 2 practical	Fifth
Mini-lesson discussion and workgroups	Lecture and practical lesson	The relationship between fruit storage and respiration, environmental effects on fruits after harvest	My knowledge and skills	1theoretical 2 practical	VI
Case study and work groups	Lecture and practical lesson	The relationship between water loss through (transpiration) and fruits after harvesting, protection of fruits during	My knowledge and skills	1theoretical 2 practical	seventh

		picking and transportation			
Listen and ask questions and work groups	Lecture and practical lesson	Methods of industrial ripening of fruits and vegetables after picking	My knowledge and skills	1theoretical 2 practical	VIII
Ask questions, listen and work groups	Lecture and practical lesson	Methods of selection, sorting, grading and packing of fruits	My knowledge and skills	1theoretical 2 practical	ninth
Ask group work questions	Lecture and practical lesson	Methods of selection, sorting, grading and packing of vegetables	My knowledge and skills	1theoretical 2 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Modern methods of fruit picking, fruit packing houses	My knowledge and skills	1theoretical 2 practical	eleventh
Listen to a mini lesson	Lecture and practical lesson	Cooling methods for primary storage	My knowledge and skills	1theoretical 2 practical	twelveth
ask questions	Lecture and practical lesson	Modern storage methods, how to establish and build refrigerated warehouses	My knowledge and skills	1theoretical 2 practical	Thirteenth
ask questions	Lecture and practical lesson	Physiological damage during storage and marketing	My knowledge and skills	1theoretical 2 practical	fourteenth
ask questions	Lecture and practical lesson	Low temperature and temperature damage	My knowledge and skills	1theoretical 2 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the

course according to the actual needs of the labor market.

.12Infrastructure	
Curriculum book Care and storage	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
jungle control / Weeds & Weeds contro	.3Course name / code
presence education	.4Forms of attendance available

Spring Semester / Second Stage	.5Semester / year
32hours of theoretical and practical class	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	
A - cognitive goals A - 1 Teaching students how to deal with the bush in the fields of economic crops. A - 2 Introducing students to how to develop methods of combating jungle so that it becomes able to apply them of all kinds. A -3 Enable the student to know how to deal with chemicals and laboratory equipment.	
B - Skills objectives of the program B - 1 To provide the student with the skills of applying scientific methods with regard to combating jungles, especially perennial ones. B - 2 Training the student on how to combat jungle to reach high productivity. B - 3 To provide the student with the necessary skills to conduct laboratory tests related to pesticides and how to give appropriate scientific judgments for each type of bush.	
Teaching and learning methods	
Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.	
Evaluation methods	
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams	

C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers. C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Weed science, Aweed, the impoyance, the characterise of weeds.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	The harmful effects of weeds.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	The advantage of weeds .	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	The classification and weeds (according to the life cgcle and the growth season)	My knowledge and skills	1theoretical 3 practical	fourth and fifth
Practical exercise, meeting and work groups	Lecture and practical lesson	Reproduction and dissemination of weeds	My knowledge and skills	1theoretical 3 practical	Sixth and Seventh
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Compartion between the mevhanical (manual) and chemical methods of weed contro .	My knowledge and skills	1theoretical 3 practical	VIII
Case study Practical exercise and work groups	Lecture and practical lesson	Herbicides formulation.	My knowledge and skills	1theoretical 3 practical	ninth
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Prevention of weed spread .	My knowledge and skills	1theoretical 3 practical	The tenth
Asking	Lecture		My	1theoretical 3 practical	eleventh,

questions and listening practical exercise and work groups	and practical lesson	Methods of Herbicides classification .	knowledge and skills		twelfth, thirteenth, and fourteenth
Ask group work questions	Lecture and practical lesson	Adjuvants and surface - active agents .	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Infrastructure	
The jungle and its fight method book	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

.12Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
beekeeping / Bees Breeding	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	

A - cognitive goals

A - 1 Teaching students how to deal with the honeybee colony ، the queen ، and the workers so that they have modern scientific specifications, methods of managing them, and factors affecting their productivity.

A -2 Introducing students to how to develop honey bee breeds and the foundations of their breeding and improvement so that he is able to characterize and serve them of all kinds.

A -3 Enable the student to know how to deal with laboratory materials and equipment.

B - Skills objectives of the program

B - 1 providing students with the skills of applying scientific methods in terms of management and service of honey bees throughout the year.

B - 2 Training the student on the correct foundations in raising honey bees to reach high productivity.

B - 3 Providing the student with the necessary skills to conduct the weekly and monthly examinations of cells and how to give the appropriate scientific judgments.

Teaching and learning methods

Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.

Evaluation methods

Take daily quick exams Quizzes

Conducting monthly exams

Conducting semester and final exams

C - emotional and value goals.

C -1 To enable the student to apply theoretical information in a practical way.

C -2 To develop the patriotic spirit of the student to increase production in quantity and quality.

C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers.

C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.

D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(

D-1

D-2

D-3

D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	The economic importance of beekeeping, bee products, the importance of bees in pollination.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	The life of the honeybee/queen colony, its characteristics, the conditions in which it is reared, its pollination, its life cycle, and its functions.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	The life of the honeybee / worker cult, its life cycle and its advantages, the male life cycle and its advantages, false mothers, and ways to treat them.	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	The activity of maids is the work carried out by the external and internal.	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Types and breeds of honey bees (small, large, Indian, western(	My knowledge and skills	1theoretical 3 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Breeds of Iraqi bees, their improvement and breeding with other breeds, crossed with Carniolan and Egyptian bees. Specifications of the standard	My knowledge and skills	1theoretical 3 practical	VI

		breed.			
Case study Practical exercise and work groups	Lecture and practical lesson	Natural expulsion, the date of its occurrence, ways with extrusion, holding parcels, the misfortunes of expulsion.	My knowledge and skills	1theoretical 3 practical	seventh
Listening and asking practical exercise questions and work groups	Lecture and practical lesson	Raising honey bee queens, the economic importance of raising them, the specifications of the hive in which the queens are raised, the types of cells used in raising queens.	My knowledge and skills	1theoretical 3 practical	VIII
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Feeding honey bee colonies, industrial feeding purposes, feeding relationship with worker age, feeding with pollen and honey substitutes, signs of food shortage in colonies.	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Construction of apiaries, types of apiaries, the appropriate place for their establishment, the number of communities in the apiary, requirements for setting up the apiary, costs for its establishment.	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Honey bee products, chemical and physical honey specifications, honey	My knowledge and skills	1theoretical 3 practical	eleventh

		crystallization, honey adulteration and detection methods, honey benefits.			
Practical exercise and workgroups	Lecture and practical lesson	Honey bee products, chemical and physical characteristics of wax and its benefits, royal jelly, its qualities and benefits, properties of barbol, bee venom, their benefits.	My knowledge and skills	1theoretical 3 practical	twelveth
ask questions	Lecture and practical lesson	Sources of nectar and pollen grains in the Iraqi country.	My knowledge and skills	1theoretical 3 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Honey bee pollination of economic plants, and how to manage honey bee colonies for the purpose of pollinating plants.	My knowledge and skills	1theoretical 3 practical	fourteenth
Asking practice questions	Lecture and practical lesson	The effect of chemical pesticides on honey bees, types of pesticides according to their toxicity to honey bees, and the protection of bee colonies from pesticides.	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the

course according to the actual needs of the labor market.

.12Infrastructure	
Beekeeping method book	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
organic farming / **Organic Agriculture**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year

2 3hours per semester theoretical and practical	.6Number of hours of study) total(
	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	
A - cognitive goals A -1 Teaching students how to manufacture organic fertilizers from animal and plant wastes and use them in agriculture and fertilization. A -2 Introducing students to the culture of using fertilizers from organic sources instead of chemical fertilizers so that they are able to describe and use them of various kinds. A -3 Enable the student to know how to deal with organic materials and laboratory equipment.	
B - Skills objectives of the program B - 1 To provide the student with the skills of applying scientific methods with regard to the manufacture of organic fertilizers. B - 2 Training the student on the correct foundations in adding organic fertilizers to crops to reach high productivity. B - 3 Providing the student with the necessary skills to conduct laboratory tests related to organic fertilizers and how to give appropriate scientific judgments.	
Teaching and learning methods	
Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.	
Evaluation methods	
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams	

C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with the simple strata of society, the peasants and farmers. C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Introduction ، history ، definition of organic agriculture - the main objectives of organic agricultural production.	My knowledge and skills	1theoretical 2 practical	the first
ask questions	Lecture and practical lesson	The importance and reasons for the transformation of organic agriculture globally.	My knowledge and skills	1theoretical 2 practical	The second
Listen and ask questions	Lecture and practical lesson	What are plant and animal wastes - their sources - how to use them in fertilizing the soil - their content of nutrients	My knowledge and skills	1theoretical 2 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	The role of organic matter in dissolving and facilitating the absorption of nutrients necessary for plant growth and soil water retention.	My knowledge and skills	1theoretical 2 practical	fourth and fifth
Practical exercise, meeting and work groups	Lecture and practical lesson	Manufacture of fertilizers from animal waste) poultry and ruminant manure(	My knowledge and skills	1theoretical 2 practical	VI
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Industrial organic fertilizer) compost- (characteristics - method of preparation.	My knowledge and skills	1theoretical 2 practical	seventh
Case study Practical exercise and work groups	Lecture and practical lesson	Factors affecting the preparation of organic fertilizers when fumigation processes - additives to organic fertilizers	My knowledge and skills	1theoretical 2 practical	VIII
Listening	Lecture	Bio-organic fertilization) bio-	My	1theoretical 2 practic	ninth

and asking practical exercise questions and work groups	and practical lesson	fertilizers - (nitrogen fixers- phosphate solvents	knowledge and skills	al	
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	How to add organic fertilizer to the soil	My knowledge and skills	1theoretical 2 practical	The tenth
Ask group work questions	Lecture and practical lesson	Agricultural courses and green manure	My knowledge and skills	1theoretical 2 practical	eleventh
Mini-lesson work groups	Lecture and practical lesson	The scientific basis for the production of vegetables and fruits organically	My knowledge and skills	1theoretical 2 practical	twelveth
Practical exercise and workgroups	Lecture and practical lesson	Reasons for switching to organic farming and organic production	My knowledge and skills	1theoretical 2 practical	thirteen and fourteen
ask questions	Lecture and practical lesson	Specifications of organic products - a field visit to one of the organic farms in the region	My knowledge and skills	1theoretical 2 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
Organic farming method book	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites

course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities . It must be linked to the description of the program.

Technical Institute / Shatra	.1Educational Institution
Department of Plant Production Techniques	.2Scientific Department / Center
Fertility and Fertilization / **Soil Fertility & Fertilizers**	.3Course name / code
presence education	.4Forms of attendance available
Spring Semester / Second Stage	.5Semester / year
2 3hours per semester theoretical and practical	.6Number of hours of study) total(

	.7Date of preparation of this description
.8Course Objectives : Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a distinguished level and his commitment to the practical arena.	
.9Course outcomes and methods of teaching, learning and assessment	
A - cognitive goals students about the importance of nutrients and the symptoms of their deficiency on plants. A -2 Introducing students to how to develop and evaluate soil fertility so that he is able to characterize it of its various types. A -3 Enable the student to know how to deal with laboratory materials and equipment.	
B - Skills objectives of the program B - 1 To provide the student with the skills of applying scientific methods with regard to the qualitative detection of fertilizer elements. B - 2 Training the student on the correct foundations to provide all the nutrients the plant needs to reach high productivity. B - 3 To provide the student with the necessary skills to conduct laboratory tests related to soil fertility and how to give appropriate scientific judgments.	
Teaching and learning methods	
Giving scientific and theoretical lectures through displays, powerpoints, slides, microscopes, experiments in examining plant samples, using various laboratory equipment and equipment, and a wooden canopy.	
Evaluation methods	
Take daily quick exams Quizzes Conducting monthly exams Conducting semester and final exams	
C - emotional and value goals. C -1 To enable the student to apply theoretical information in a practical way. C -2 To develop the patriotic spirit of the student to increase production in quantity and quality. C - 3 Instilling the concept of community service and the best way to deal with	

the simple strata of society, the peasants and farmers. C - 4 Develop professional ethics . Agricultural engineer among students by following the correct professional behavior.
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D-1 D-2 D-3 D-4

.10Course Structure					
Evaluation method	education method	Unit / course or topic name	Required learning outcomes	hours	the week
Questions and answers mini practical lesson	Lecture and practical lesson	Nutrients and their importance to plants, major elements, intermediate elements, trace elements.	My knowledge and skills	1theoretical 3 practical	the first
ask questions	Lecture and practical lesson	Readiness of nutrients, types of readiness, factors affecting them.	My knowledge and skills	1theoretical 3 practical	The second
Listen and ask questions	Lecture and practical lesson	Symptoms of deficiency of elements, major, medium, rare elements	My knowledge and skills	1theoretical 3 practical	the third
Practical exercise, meeting and work groups	Lecture and practical lesson	Mechanism of nutrient absorption, absorption, contact ion exchange, diffusion, mass flow, carrier theory.	My knowledge and skills	1theoretical 3 practical	the fourth
Practical exercise, meeting and work groups	Lecture and practical lesson	Absorption, its types, energetic (bio-active), non-energy (bio-active(	My knowledge and skills	1theoretical 3 practical	Fifth
Mini Lesson Discussion Practical Exercise and Workgroups	Lecture and practical lesson	Nitrogen, its importance to plants, sources of nitrogen, nitrogen transformations in the soil	My knowledge and skills	1theoretical 3 practical	VI
Case study Practical exercise and work groups	Lecture and practical lesson	Phosphorous, its importance to plants, its sources, its forms, factors affecting its readiness, its fixation in the soil.	My knowledge and skills	1theoretical 3 practical	seventh
Listening	Lecture	Potassium and	My	1theoretical 3 practical	VIII

and asking practical exercise questions and work groups	and practical lesson	methods of adding fertilizers, its importance to plants, its services, sources, readiness, types of fertilizers and methods of adding them	knowledge and skills		
Asking questions and listening practical exercise and work groups	Lecture and practical lesson	Organic and liquid fertilizers, their importance, types	My knowledge and skills	1theoretical 3 practical	ninth
Ask group work questions	Lecture and practical lesson	Nitrogenous, phosphate and potash fertilizers (simple, compound, complete), their types and characteristics	My knowledge and skills	1theoretical 3 practical	The tenth
Mini-lesson work groups	Lecture and practical lesson	Mixed fertilizers, their importance, disadvantages of the process of mixing fertilizers of all kinds	My knowledge and skills	1theoretical 3 practical	eleventh
Practical exercise and workgroups	Lecture and practical lesson	The residual effect of fertilizers in the soil, nitrogen, phosphate, potash and organic fertilizers	My knowledge and skills	1theoretical 3 practical	twelveth
ask questions	Lecture and practical lesson	The use of fertilizers as terms, their types (chemical, organic(	My knowledge and skills	1theoretical 3 practical	Thirteenth
Asking practice questions	Lecture and practical lesson	Manufacture of fertilizers in Iraq and the Arab world, the	My knowledge and skills	1theoretical 3 practical	fourteenth

		importance of manufacturing fertilizers in Iraq and the Arab world, the use of fertilizers in Iraq			
Asking practice questions	Lecture and practical lesson	Study of soil fertility problems	My knowledge and skills	1theoretical 3 practical	Fifteenth

.11Course Development Plan
- Providing the possibility of academic support in organizing field visits. - Providing the appropriate classroom environment that enables the teacher to diversify teaching strategies. - Providing information technology in the campus library. -Hosting experts from outside the institute ، or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual needs of the labor market.

.12Infrastructure	
The book systematic fertility and fertilization	.1Required course books
Supporting resources for each course	.2Main references) sources(
Scientific journals, as well as research, letters and theses of professors in the same specialty	a . Recommended books and references) scientific journals ، reports(0000 ،
Location www.google.com	b . Electronic references ، websites