وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي
قسم الاعتماد

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

اسم الجامعة: جامعة القادسية
الكلية: الزراعة
القسم العلمي: البستنة وهندسة الحدائق
اسم البرنامج الاكاديمي: البستنة وهندسة الحدائق
اسم الشهادة النهائية:بكالوريوس علوم البستنة وهندسة الحدائق
النظام الدراسي: فصلي (كورسات)
تاريخ ملء الملف: 2024/4/4

التوقيع :
اسم رئيس القسم : أ.م.د. علي صباح علي
التاريخ : 2024/4/4

التوقيع :
اسم المعاون العلمي : أ.د. حيدر عباس دريبي
التاريخ :2024/4/4

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي: أ.م.د حيدر غازي عبد الشهد
التاريخ: 2024/4/4
التوقيع:

مصادقة السيد العميد
الاستاذ الدكتور
حياوي ويوه عطيه الجوذري
العميد

1−Vision of department

The Department of Horticulture and Landscape Engineering seeks to achieve academic leadership and raise the academic and research level in order to keep pace with scientific development and disseminate it among members of society and to continuously work to create real partnerships with corresponding departments inside .and outside Iraq.

2− Message of department

The department's mission is to contribute to the development of the agricultural sector, both public and private, by providing the community with scientific cadres specialized in horticultural sciences and garden engineering, keeping pace with technical development in the field of horticultural sciences, and .implementing applied research and studies to solve agricultural problems.

3−Goals of department:

he objectives of the Department of Horticulture and Landscape Engineering are in line with the objectives of the college and university, which seeks to qualify its graduates at the required level as they are the final stage of the overall educational activities that students undergo during their academic lives, and one of the most important objectives of the department.

1- 1. Preparing young staff specialized in the fields of horticulture and garden engineering (ornamental plants, vegetables, fruits, and greenhouse management) to work in various agricultural sectors by granting them a bachelor's degree in horticulture and garden engineering.

2- Preparing specialized scientific cadres to carry out agricultural scientific research that contributes to the development of the agricultural sector, solving problems that hinder the improvement of agricultural production, and developing appropriate solutions to them.
3- Developing the local agricultural sector by disseminating modern agricultural information through seminars, workshops and scientific conferences, which contribute to developing agricultural awareness for farmers and those interested in the agricultural sector.
4- Using modern agricultural technologies (smart agriculture, tissue farming, plant biotechnology) to increase and improve horticultural agricultural production and work to transfer these modern technologies to the local community through joint cooperation with the private agricultural sector.
5- Holding training courses and providing consultations to individuals and agricultural companies for the public and private sectors.
6- Working to build a real partnership with the corresponding scientific departments in colleges of agriculture inside and outside Iraq.

4- Program accreditation

Non at this time

5- Other external influences

The program is sponsored by the Ministry of Higher Education and Scientific Research

6- Program structure

Program structure	Number of courses	Units	Percentage	Notes
Enterprise requirements	12	16	1.9%	*computer (4 courses)

				* English language (4 courses) * Arabic language * Human rights * Al-Baath crimes
College requirements	16	41.5	23.6	* **Agricultural machinery and equipment** * **Land area** * **organic chemistry** * **Biochemistry** * **Mathematics** * **Engineering Drawing** * **Soil principles** * **Principles of field crops** * **Food industry** * **Farm management** * **agricultural economy** * **Agricultural guidance** * **statistics** * **animal protecting** * **Principles of microbiology**
Department requirements	61	118.5	67.3	
summer training	Satisfied	Satisfied	Satisfied	A basic requirement for graduation
Others				
the total	89	176	%100	

* Notes may include whether the course is core or elective

7- Program description				
Year/level	Course or course code	Course or course code	Credit hours	
First stage	ME 205	Agricultural machinery and equipment	3	2
First stage	A 520	Flat space	3	2
First stage	SO 201	Principles of soil science	3	2
First stage	A 501	Mathematics		2
First stage	HR 101	General plant	3	2
First stage	A 508	organic chemistry	3	2
First stage	A 504	English language 1		1
First stage	A 513	Human rights and public freedoms		1
First stage	CR 103	Principles of field crops	3	2
First stage	AP 101	Principles of animal production	3	2
First stage	FO 104	Principles of food industries	3	2
First stage	A 517	Statistics	3	2
First stage	A 505	computer applications		2
First stage	A 511	Principles of agricultural economics		2
First stage	A 524	Arabic language		1
First stage	A 516	Engineering Drawing	3	
Second stage	A519	**Principles of microbiology**	3	2
Second stage	HR 201	**Plant taxonomy**	3	2
Second stage	HR 203	**Plant physiology**	3	2
Second stage	HR 205	**Principles of garden classification**	3	2
Second stage	A 502	**Genetics**	3	2
Second stage	PP 410	**Horticultural plant insects**	3	2
Second stage	A 506	computer applications2		2
Second stage	SO 406	Plants nutrition	3	2
Second stage	A 510	Biochemistry	3	2
Second stage	A 528	Plant environment	3	2
Second stage	HR 206	Organic farming	3	2
Second stage	HR 208	Nurseries and propagation	3	2
Second stage	A 512	Principles of agricultural extension		2
Second stage	CR 406	Jungles and ways to combat them	3	2
Second stage	HUMR 514	Baath Party crimes		1
Second stage	A 509	English language 2		1
Third stage	HR 301	Nephric fruit1	3	2
Third stage	HR 303	Vegetables production1	3	2
Third stage	HR 305	Decoration plants1	3	2
Third stage	A 518	Design and analysis of experiments	3	2
Third stage	HR	Plant growth regulators	3	2
Third stage	HR 309	Medicinal and aromatic plants	3	2
Third stage	S0 313	Irrigation and puncture	3	2
Third stage	A 510	**English language**		1
Third stage	HR 302	Nephric fruit 2	3	

Third stage	HR 304	Vegetables production 2	3	2
Third stage	HR 306	Decoration plants 2	3	2
Third stage	PP 308	Beekeeping	3	2
Third stage	PP 413	Horticultural plant diseases	3	2
Third stage	HR 308	Plant breeding	3	2
Third stage	A 509	computer applications SPSS 3		
Forth stage	HR 401	Plant Tissue	3	2
Forth stage	HR 403	Sustainable fruit	3	2
Forth stage	HR 405	Vegetable seed production	3	2
Forth stage	HR 407	Protected agriculture	3	2
Forth stage	HR 409	Garden engineering	3	2
Forth stage	HR 411	Farm management	3	2
Forth stage	A 511	English language 4		1
Forth stage	HR 402	Production of grapes and small fruits	3	2
Forth stage	HR 404	Palm production	3	2
Forth stage	HR 406	Biotechnologies	3	2
Forth stage	HR 408	Harvesting and storing horticultural crops	3	2
Forth stage	A 523	Seminars		1
Forth stage	SO 305	Soil fertility and fertilizers	3	2

8- Expected learning outcomes of the programme
Knowledge
1- The student must be familiar with horticulture and agricultural engineering. 2- The student must be familiar with the science of vegetables, fruits, and ornamental plants and methods of serving, producing, and marketing them. 3- The student must be familiar with greenhouse management and modern agricultural techniques. 4- The student must be familiar with methods of raising and improving horticultural crops (vegetables and fruits). 5- The student must be familiar with other agricultural sciences, such as fertilizers, plant nutrition, harvesting sciences, and storage and marketing of agricultural products.
Skills
1- The student acquires the skill for field work, establishing and managing agricultural and horticultural fields and facilities.
2- The student acquires the skill in propagating ornamental plants and managing agricultural nurseries.
3- The student acquires the skill in using modern agricultural techniques in agricultural

production.
4- The student acquires the skill and experience in working with laboratory equipment while carrying out applied research within laboratories such as the tissue culture laboratory
5- The student acquires the skill to diagnose and manage nutrient deficiencies during the stages of agricultural production.
6- The student gains experience in combating agricultural pests without affecting the ecosystem and biodiversity.
Values
* Instilling noble values in dealing with others during agricultural work and spreading the spirit of love, tolerance and sincerity in work.
* Instilling human values and a sense of responsibility by preserving agricultural cover, increasing agricultural areas and horticultural facilities in Iraq in particular, and achieving self-sufficiency in local production of horticultural crops.
* Make the student feel the importance of self-sufficiency and food security and encourage teamwork in managing agricultural and horticultural facilities and stay away from private interests.
* Make the student feel the importance of the land and that the world has now become a small green village that must be preserved by following the conservative agriculture method in managing agricultural projects.

9– Teaching and learning strategies

1- Achieving educational goals and outcomes that are consistent with the requirements of academic standards.

2- Improving the quality of the academic program based on the resources available for the program and striving diligently to achieve the requirements of academic accreditation.

3- Seeking strategic engagement with beneficiaries in the public and private agricultural sectors in a manner consistent with the interest of the academic program.

4- The department seeks to provide all modern technologies that support the modern teaching system, which helps faculty members reach the program goals in record time.

5- Determine the requirements of the agricultural community and make them a basic point towards development and success in serving the agricultural community.

6- Building bridges of joint research and academic cooperation with corresponding departments in advanced local, Arab and international colleges and universities.

10- Evaluation methods

The following assessment methods are implemented on all subjects and at all stages of the academic program.

* **Direct oral exams.**
* **Rapid daily exams.**
* **Monthly written exams.**
* **Classroom and home activities (preparing scientific reports and creating educational posters).**
* **Conducting scientific competitions.**
* **Conducting scientific trips and preparing a report on the trip and the extent to which the student has benefited from it.**
* **Final written exams.**

11- education staff

Faculty members staff

Preparing the teaching staff	Special requirements/skills	Specialization	Scientific rank

lecturer	personnel			Private	General	
	1			Fruit	horticulture	Prof.
	1			Design experiments	Economics	Prof.
	1			Plant breeding	Field crops	Asst. prof.
	2			General plant	Field crops	Asst. prof.
	1			Insects	Plant protection	Asst. prof.
	1			Soil pollution	Soil sciences	Asst. prof.
	1			Biology	Biology	Asst. prof.
	2			Fruit	horticulture	Lecturer
	1			Decoration plants	horticulture	Lecturer
	3			Field crops	Field crops	Lecturer
	1			Pesticides	Plant protection	Lecturer
	2			Biology	Biology	Assist lecturer
	1			Decoration plants	Horticulture	Assist lecturer
	1			Plant breeding	Field crops	Assist lecturer
	1			Chemistry	Chemistry	Assist lecturer
	1			Accounting	management and economy	Assist lecturer
	1			English language	English language	Assist lecturer
	1			Biological resistance	Plant protection	Assist lecturer
	1			Food industry	Food industry	Assist lecturer

Professional development

Orienting new faculty members

* It is necessary to review modern sources, update weekly lectures, and use modern technologies in presenting the lecture in order to excite the student for the lecture and give him the opportunity to participate and express observations and questions related to the lecture.

* It is necessary to link scientific material to life in order to consolidate scientific concepts and explain phenomena. This will create a connection that explains what is happening around it and helps in finding appropriate solutions facing the new teacher.

* Urging new teachers to participate in scientific activities inside and outside educational institutions.

* Urging the teaching staff to work in a team spirit inside and outside the department.

* Commitment to the directives of the Scientific Committee, Department Council, and College Council.

* Urging the new teacher to take educational courses on teaching methods, soundness of the Arabic language, and psychology, and ensuring that they pass these courses because they have a major role in developing the teacher's intellectual skills.

Professional development for faculty members

* Involving the teaching staff in specialized training courses as well as other training courses, especially those in the field of teaching methods and psychology.

* The department is committed to providing all facilities regarding the use of modern technologies in presenting scientific lectures and thus assisting the teaching staff in achieving the program objectives.

* Building bridges of joint scientific and research cooperation with other faculty members in corresponding departments in advanced local, Arab and international universities.

* Conducting an annual teaching evaluation and following up on cases of weakness in the

scientific or research field and addressing them in the future.

12- Acceptance standard

The annual admission plan for students is based on the capacity, number of teaching staff of the department, and the availability of modern scientific halls and scientific laboratories. Accordingly, the department annually requests a specific number of students in order to enroll in studies in the department. However, the total number accepted is affected by several factors, including the need of the labor market and the student's desire to The specialty in which he wishes to complete his studies, as well as the preparation of students accepted into the college according to the central admission system followed by the Ministry of Higher Education and Scientific Research.

13- The most important sources of information about the program

1- Methodical books in Arabic.

2- Methodical books in English.

3- Local and international agricultural scientific journals.

4- Internet.

5- artificial intelligence.

14- Program development plan

* Developing curricula by constantly keeping pace with the development taking place in the study programs of the corresponding departments in local, Arab and international universities, with the nature of the study subjects that meet the actual need and the extent of their impact on the productive and academic activities of the beneficiaries in the public and private sectors.

* The development of the program aims to solve the problems facing the public and private sectors and work to overcome these obstacles and reach optimal scientific solutions.

*Ensuring the exchange of experiences by conducting field visits between teaching staff during the holding of workshops, seminars and scientific conferences inside and outside Iraq, because they have a major role in reformulating the scientific curricula of the academic program and in a way that serves the development of the educational process.

*The department works to develop its teaching staff and other supporting staff by making room for them to complete their graduate studies in the specializations that serve the department, especially those rare ones. We also work to compensate for the shortage in the teaching staff as a result of some members being referred to retirement or moving to other universities

Program skills chart															
Learning outcomes required from the programme															
Value				**Skills**				**Knowledge**				Essential or optional	Course Name	Course Code	Year/level
C4	**C3**	**C2**	**C1**	**B4**	**B3**	**B2**	**B1**	**A4**	**A3**	**A2**	**A 1**				
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Agricultural machines and machinery	**ME 205**	First stage
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Flat space	**A 520**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of soil science	**SO 201**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Mathematics	**A 501**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	General plants	**HR 101**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Organic chemistry	**A 508**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	English language1	**A 504**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	**Human right and freedom**	**A 513**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of field crops	**CR 103**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of animal production	**AP 101**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of food industries	**FO 104**	

√	√	√	√	√	√	√	√	√	√	√	√	Essential	Statistics	**A 517**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Computer application1	**A 505**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of agricultural economics	**A 511**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Arabic language	**A 524**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Engineering Drawing	**A 516**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Principles of microbiology	**A 519**	Second stage
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Plant classification	**HR 201**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	**Plant physiology**	**HR 203**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Garden design principles	**HR 205**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	**Genetics**	**A 521**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Horticultural plant insects	**PP 410**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Computer application2	**A 506**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Plant nutrition	**SO 406**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Biochemistry	**A 510**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Plant environment	**A 528**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Organic farming	**HR 206**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Nurseries and propagation	**HR 208**	

√	√	√	√	√	√	√	√	√	√	√	√	Essential	Agricultural guidance principles	**A 512**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Jungles and ways to combat them	**CR 406**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Baath Party crimes	**HUMR 514**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	English language2	**A509**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Necrotic fruit1	**HR 301**	Third stage
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Vegetable production1	**HR 303**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Decoration Plants1	**HR 305**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Design and analysis of experiments	**A 518**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Plant growth regulators	**HR 307**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Medicinal and aromatic plants	**HR 309**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Irrigation and puncture	**SO 313**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	English language3	**A510**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Necrotic fruit2	**HR 302**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Vegetable production2	**HR 304**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	2 Decoration Plants	**HR 306**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Beekeeping	**PP 308**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Diseases of	**PP 413**	

												horticultural plants		
√	√	√	√	√	√	√	√	√	√	√	Essential	Plant breeding	**HR 308**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Computer application SPSS3	**A 507**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Plant Tissue	**HR 401**	Forth stage
√	√	√	√	√	√	√	√	√	√	√	Essential	Sustainable fruit	**HR 403**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Soil fertility and fertilizers	**HR 405**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Protected agriculture	**HR 407**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Garden engineering	**HR 409**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Farm management	**HR 411**	
√	√	√	√	√	√	√	√	√	√	√	Essential	English language4	**A511**	Forth stage
√	√	√	√	√	√	√	√	√	√	√	Essential	Production of grapes and small fruits	**HR 402**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Palm production	**HR 404**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Biotechnologies	**HR 406**	
√	√	√	√	√	√	√	√	√	√	√	Essential	Harvesting and storing horticultural crops	**HR 408**	

√	√	√	√	√	√	√	√	√	√	√	√	Essential	Seminar	**A 523**	
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Soil fertility and fertilizers	**SO 305**	

Please check the boxes corresponding to the individual learning outcomes from the program subject to evaluation. ●

Description of courses for the Department of Horticulture and Landscape Architecture

Course description form

Course name: Botany
course code: HR101
Semester/Year: Autumn
The date this description was prepared is 4/4/2024
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
(Name of the course administrator (if more than one name is mentioned
Dr. Ahmed Fahim Jabbar Al-Jubouri
Course objectives
* Know the basic concepts of botany. * Knowing the phenotypic and anatomical characteristics of monocotyledonous and dicotyledonous plants. * Understanding modern methods used in plant classification. * Know the basic parts of plants.
Teaching and learning strategies
* **Introducing the student to the importance of botany**. * **Teaching the student the correct methods for diagnosing plants and understanding the role of each part of it**. * **Conducting monthly and final theoretical and practical tests and adopting them as**

luation methods.

*** The student should know the modern methods used in plant classification.**

*** The student knows the importance of botany and its role in agricultural production.**

*** Teaching the student the correct way to collect plant samples, dry them, and store them he herbarium.**

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Hour	week
Exams, reports and homework	Explanation and presentation of lectures	A historical erview of botany	The student's ility to evaluate e importance of e tany and a urse in ricultural oduction	5 urs	First
	Explanation and presentation of lectures	Departments of botany		5 h	Second
	Explanation and presentation of lectures	Chemical mpounds ganic plant		5 h	Third
	Explanation and presentation of lectures	Chemical mpounds ganic plant		5 h	Fourth
	Explanation and presentation of lectures	Chemical mpounds organic the plant		5 h	Fifth
	Explanation and presentation of lectures	Plant physiology		5 h	Sixth
	Explanation and presentation of lectures	Anatomy of nts		5 h	Seventh
	Explanation and presentation of lectures	Methods of classifying plants		5 h	Eighth
	Explanation and presentation of lectures	Factors affecting nt growth		5 h	Ninth
	Explanation and presentation of	Plant groups		5 h	Tenth

	lectures	nocots			
	Explanation and presentation of lectures	Dicotyledonous plant groups		5 h	Eleventh
	Explanation and presentation of lectures	Plant aggregates vered with seeds		5 h	Twelfth
	Explanation and presentation of lectures	Plant groups		5 h	irteenth
	Explanation and presentation of lectures	Genetics in lants		5 h	urteenth
	Explanation and presentation of lectures	Evolution in lants		5 h	Fifteenth

Course evaluation

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%
* Final exam for the practical part 20%
* Final exam for the theoretical part 40%

Learning and teaching resources

Required textbooks (methodology, if any)	Basics of general plants by hammad Abdel Wahab Al-Naghi and others
Main references (sources	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Agricultural machines and machinery
Course code: ME 205
Semester/Year: Autumn
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Knowledge of the basic concepts of agricultural machinery and machinery. * Study the effect of using agricultural machinery and machinery in increasing agricultural duction. * Understanding the modern methods used in using modern agricultural mechanization. * Knowledge of the theoretical and scientific basis used in the operation of agricultural machinery equipment.
Teaching and learning strategies
*** Introducing the student to the most important agricultural machines and machinery and scientific methods used when using them.** *** Teaching the student the correct methods of using agricultural machinery and equipment.** *** Conducting monthly and final theoretical and practical tests and adopting them as**

evaluation methods.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Hours	Week
Exams, reports and homework	Explanation l presentation of lectures	asics of agricultural machinery and machinery	The student's ability to evaluate the importance of using agricultural machinery and equipment	5	First
	xplanation and presentation of lectures	Means of transportation		5	Second
	xplanation and presentation of lectures	Agricultural tug		5	Third
	xplanation and presentation of lectures	Main parts or agricultural tug		5	Forth
	xplanation and presentation of lectures	Engines		5	Fifth
	xplanation and presentation of lectures	Fuel system		5	Sixth
	xplanation and presentation of lectures	Lubrication system		5	Seventh
	xplanation and presentation of lectures	Cooling system		5	Eighth
	xplanation and presentation of lectures	Transmission devices		5	Ninth
	xplanation and presentation of lectures	Hydraulic device for agricultural machinery		5	Tenth
	xplanation and presentation of lectures	Soil preparation equipment		5	Eleventh
	xplanation and presentation of lectures	Fertilization equipment		5	Twelfth
	xplanation and presentation of lectures	Irrigation equipment		5	Thirteenth

	Explanation and presentation of lectures	Plant protection equipment		5	Fourteenth
	Explanation and presentation of lectures	Reaping and harvesting equipment of all kinds		5	Fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Class reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Learning and teaching resources	
Required textbooks (methodology, if any)	
Main references (sources)	
Recommended supporting books and references (scientific journals, report ,etc….)	
Electronic references, Internet sites	

Course description form

Course name: Principles of Agricultural Economics
Course code: A 511
Semester/Year: Spring
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 60 hours / 2 units.
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Knowledge of the basic concepts of agricultural economics. * Study of land resource economics. * Understanding rent and studying theories of rent and the factors affecting it. * Evaluation of agricultural resources and factors affecting agricultural land values.
Teaching and learning strategies
* **Introducing the student to the applications of natural resource economics in agriculture.** * **Teaching the student the economic laws and economic principles used in agricultural production.** * **Conducting monthly and final theoretical and practical tests and adopting them as valuation methods**

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hours**	**Week**
Exams, reports and homework	Explanation and presentation of lectures	Basics of agricultural economics	The student's ability to evaluate the importance of using agricultural economics and the course in agricultural production	5	First
	Explanation and presentation of lectures	Land resource economics		5	Second
	Explanation and presentation of lectures	Demand for Land and its use		5	Third
	Explanation and presentation of lectures	Intensity of use For Earth		5	Forth
	Explanation and presentation of lectures	View resources The floor		5	Fifth
	Explanation and presentation of lectures	Rent and the concept of rent		5	Sixth
	Explanation and presentation of lectures	Renting and dividing agricultural lands		5	Seventh
	Explanation and presentation of lectures	gricultural tenure		5	Eighth
	Explanation and presentation of lectures	The reality of agricultural resources in Iraq		5	Ninth
	Explanation and presentation of lectures	Agricultural resources assessment		5	Tenth
	Explanation and presentation of lectures	Water resources and demand for water resources		5	Eleventh
	Explanation and presentation of lectures	Water resources in Iraq		5	Twelfth

Course evaluation	
* Theoretical exam 22% * Practical exam 13% * Class reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%	
Learning and teaching resources	
Required textbooks (methodology, if any)	Natural Resource Economics by Dr. Hashem Al-Samarrai and Dr. Abdullah Al-Mashhadani .
Main references (sources)	
Recommended supporting books d references (scientific journals, . reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Plant physiology
Course code: HR 203
Semester/Year: Autumn
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Introducing the student to the components of cells and tissues that make up the plant body. * Training the student on how to make slides and anatomical sections.
Teaching and learning strategies
* **Introducing the student to plant physiology and its influential role on agricultural production.** * **Teaching the student sufficient skills in how to deal with laboratory equipment.** * **Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Evaluation method	Learning methods	Name of the unit or topic	Required learning outcomes	Hours	Week
Exams, reports and homework	Explanation and presentation of lectures	Plant relationship with water	ining knowledge of ne parts of the plant cell and the ysiological activities within the plant	5	First
	Explanation and presentation of lectures	Diffusion and osmosis		5	Second
	Explanation and presentation of lectures	Water stress And osmotic potential		5	Third
	Explanation and presentation of lectures	luencing factors On osmosis		5	Forth
	Explanation and presentation of lectures	Water potential d its components		5	Fifth
	Explanation and presentation of lectures	Plasma and imbibition		5	Sixth
	Explanation and presentation of lectures	Absorption mechanics water		5	Seventh
	Explanation and presentation of lectures	Water transport through plasma channels		5	Eighth
	Explanation and presentation of lectures	Transpiration		5	Ninth
	Explanation and presentation of lectures	Opening mechanism And closing the stomata		5	Tenth
	Explanation and presentation of lectures	Breathing		5	Eleventh
	Explanation and presentation of	Breathing		5	Twelfth

	lectures				
	Explanation and presentation of lectures	Photosynthesis		5	Thirteenth
	Explanation and presentation of lectures	Photosynthesis		5	Fourteenth
	Explanation and presentation of lectures	Photosynthesis		5	Fifteenth

Course evaluation

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%
* Final exam for the practical part 20%
* Final exam for the theoretical part 40%

Learning and teaching resources

Required textbooks (methodology, if any)	Basics of plant physiology by Dr. Muhammad Abdel Azim Kazem and others
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Weeds and ways to combat them
Course code: CR 406
Semester/Year: Spring
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* For the student to classify the types of jungles spread in Iraq and the world. * The student should separate the types of jungles and the most important methods used to reduce their impact. * The student gets to know the most important jungles spread throughout Iraq. * The student should know the scientific methods used to reduce jungle damage. * The student should conduct chemical control and determine the type of pesticide used depending on the type of bush to be controlled.
Teaching and learning strategies
* **Introducing the student to the most common types of jungles in Iraq and the most important methods used when combating them**. * **Teaching the student the correct methods for classifying and identifying the type of weeds and the most important methods used to combat them**.

*** Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure

Evaluation method	Learning methods	Name the topic or units	Required learning outcomes	Hours	Week
Exams, reports and homework	Explanation and presentation of lectures	Properties of plants The bush and its seeds	The student's ability to evaluate the importance of using weed control methods to reduce its negative impact on plant production	5	First
	Explanation and presentation of lectures	Ways to combat weeds		5	Second
	Explanation and presentation of lectures	Use of tillage In the fight		5	Third
	Explanation and presentation of lectures	ological methods		5	Forth
	Explanation and presentation of lectures	Chemical methods		5	Fifth
	Explanation and presentation of lectures	Use the course agricultural		5	Sixth
	Explanation and presentation of lectures	Use burning and covering methods		5	Seventh
	Explanation and presentation of lectures	Scientific terms used in science the jungle		5	Eighth
	Explanation and presentation of lectures	Pesticides and plants		5	Ninth
	Explanation and presentation of lectures	Pesticide choose		5	Tenth
	Explanation and presentation of lectures	Anti-input Crop fields Gardening		5	Eleventh
	Explanation and presentation of	ombating aquatic weeds		5	Twelfth

	lectures				
	Explanation and presentation of lectures	ombating jungles in The protected houses And nurseries		5	irteenth
	Explanation and presentation of lectures	Absorption physiology d the pesticide is ansported inside the plant		5	urteenth
	Explanation and presentation of lectures	Absorption physiology And the pesticide is transported inside the plant		5	Fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Classroom reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Learning and teaching resources	
Required textbooks (methodology, if any)	Jungle Science by Dr. Baqir Khalaf Al-Jubouri
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Organic Agriculture
Course code: HR 206
Semester/Year: Spring
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
*** Learn about the organic farming system and its requirements.** *** Planning to establish organic farms.** *** Knowing the types of pesticides and organic fertilizers allowed for use in the organic farming system.** *** Knowing the theoretical and scientific basis used in the work of organic farms.**
Teaching and learning strategies
*** The learner must be familiar with and able to define the concept of the organic farming system that must be available on organic farms.** *** Identify and learn the controls and conditions that must be taken into account when establishing organic farms.** *** Conducting monthly and final theoretical and practical tests and adopting them as**

evaluation methods.					
Course structure					
Evaluation method	**Learning methods**	**Name the topic and units**	Required learning outcomes	**Hours**	**Week**
	Explanation and presentation of lectures	Learn about the history of organic farming	The student's ability to evaluate the importance of using organic agriculture and its impact on agricultural production	5	First
	Explanation and presentation of lectures	Recognize the importance Organic Agriculture		5	Second
	Explanation and presentation of lectures	Types of materials Membership used		5	Third
	Explanation and presentation of lectures	Spread areas Organic farms		5	Forth
	Explanation and presentation of lectures	Allantrogenic organic compounds		5	Fifth
	Explanation and presentation of lectures	Nitrogenous organic compounds		5	Sixth
	Explanation and presentation of lectures	Decomposition of compounds Membership		5	Seventh
	Explanation and presentation of lectures	Decomposition of compounds trogenous organic matter		5	Eight
	Explanation and presentation of lectures	Humus and aggregates Humic acids		5	Ninth
	Explanation and presentation of lectures	Interpenetration of colloids rganics and colloids Humus		5	Tenth
	Explanation and presentation of lectures	The role of organic matter in soil fertility		5	Eleventh
	Explanation and	The role of organic		5	Twelfth

	presentation of lectures	matter in soil fertility			
	Explanation and presentation of lectures	rms and conditions rganic Agriculture		5	irteenth
	Explanation and presentation of lectures	The quality and quantity of agricultural production under organic agriculture		5	urteenth
	Explanation and presentation of lectures	The quality and quantity of agricultural production under organic agriculture		5	fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Classroom reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Learning and teaching resources	
Required textbooks (methodology, if any)	
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Vegetable production 1
Course code: HR 303
Semester/Year: Autumn
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Knowing the basic concepts of the science of producing winter vegetable crops. * Knowing the most important plant families and important winter vegetable crops in Iraq and their role in increasing agricultural production. * Understanding the modern methods used in producing and marketing the product of winter vegetable crops. * Knowing the theoretical and scientific basis used in growing the most important vegetable crops.
Teaching and learning strategies
* **Introducing the student to the most important winter vegetable crops and the scientific methods used when growing them.** * **Teaching students the correct methods of producing and marketing the most important**

winter vegetable crops in Iraq.

*** Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure

Evaluation method	Learning methods	Name of topic and units	Required learning outcomes	Hours	Week
Exams, reports and homework		Introduction to the science of winter egetable production	The student's ability to evaluate the importance of producing winter vegetable crops	5	First
		tivation areas Vegetables and ilities necessary for production		5	Second
		Influencing vironmental factors On production		5	Third
		Production methods Seeds for crops Winter		5	Forth
	Explanation and presentation of lectures	Crop classification methods winter vegetables		5	Fifth
	Explanation and presentation of lectures	Pest Control agricultural		5	Sixth
	Explanation and presentation of lectures	Methods of growing and producing vegetable crops Winter		5	Seventh
	Explanation and presentation of lectures	Production of leafy vegetable crops ((lettuce and chard		5	Eight
	Explanation and presentation of lectures	Production of leafy vegetable crops (celery and cress)		5	Ninth
	Explanation and presentation of lectures	Production of leguminous vegetables		5	Tenth

	Explanation and presentation of lectures	Production of vegetable crops for the Narcissi family		5	Eleventh
	Explanation and presentation of lectures	Production of vegetable crops for he combined family		5	Twelfth
	Explanation and presentation of lectures	Production of vegetable crops for the Apiaceae family		5	irteenth
	Explanation and presentation of lectures	Production of getable crops for the Ramadan family		5	urteenth
	Explanation and presentation of lectures	nservation and rketing art the product		5	ifteenth

Course evaluation

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%
* Final exam for the practical part 20%
* Final exam for the theoretical part 40%

Learning and teaching resources

Required textbooks (methodology, if any)	First and second vegetable production by Dr. Adnan Nasser Matloob and others
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Medicinal and aromatic plants
Course code: HR 309
Semester/Year: Autumn
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
alialhasan@qu.edu.iq Dr. Ali Sabah Ali Al-Hassan
Course objectives
* Knowing the basic concepts of medicinal and aromatic plants. * Studying the impact of using the active ingredients of medicinal and aromatic plants and their influential role in the food and pharmaceutical industries. * Understanding the modern methods used in using extraction devices and equipment. * Knowledge of the theoretical and scientific basis used in the production of medicinal and aromatic plants.
Teaching and learning strategies
*** Achieving educational outcomes goals that meet academic standards.** *** Improving the quality of the academic program, both in light of available resources and striving to meet the requirements of academic accreditation.** ***Seeking strategic connection with local and international academic bodies, in a way that is reflected in the form of the joint program and academic degrees.** *** The department is committed to providing modern technologies in presenting academic subjects in a way that helps the teacher deliver the objectives of the academic program.**

* Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.					
Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hour**	**Week**
	Explanation and presentation of lectures	Basics of medicinal and aromatic plants		5	First
	Explanation and presentation of lectures	The importance of medicinal plants		5	Second
	Explanation and presentation of lectures	Division and classification Medicinal plants		5	Third
	Explanation and presentation of lectures	Division and classification Aromatic plants		5	Forth
	Explanation and presentation of lectures	ondary compounds		5	Fifth
	Explanation and presentation of lectures	Public roads To extract		5	Sixth
	Explanation and presentation of lectures	Public roads To extract	The student's ability to evaluate the importance of using medicinal and aromatic plants and heir role in the food and pharmaceutical industries	5	Seventh
	Explanation and presentation of lectures	tors affecting Production of medicinal and aromatic plants		5	Eighth
	Explanation and presentation of lectures	ltivation of edicinal plants (black seed)		5	Ninth
	planation and resentation of lectures	Cultivation of medicinal plants (mint and thyme)		5	Tenth
	Explanation and presentation of lectures	Cultivation of medicinal plants ((lemongrass		5	Eleventh
	Explanation and presentation of lectures	Cultivation of medicinal plants (rosemary		5	Twelfth

	Explanation and presentation of lectures	Cultivation of medicinal plants (coriander)		5	hirteenth
	Explanation and presentation of lectures	Cultivation of medicinal plants (digitals)		5	urteenth
	Explanation and presentation of lectures	Harvesting, methods preserving samples, and marketing the product		5	Fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Classroom reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Learning and teaching resources	
Required textbooks (methodology, if any)	
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Vegetable protection2
Course code: HR 304
Semester/Year: Spring
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Knowing the basic concepts of the science of producing summer vegetable crops. * Knowing the most important plant families and important summer vegetable crops in Iraq and their role in increasing agricultural production. * Understanding the modern methods used in producing and marketing summer vegetable crops. *Knowing the theoretical and scientific basis used in growing the most important summer vegetable crops.
Teaching and learning strategies
* **Introducing the student to the most important summer vegetable crops and the scientific methods used when growing them.** * **Teaching students the correct methods of producing and marketing the most important**

summer vegetable crops in Iraq.

*** Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hour**	**Week**
	Explanation and presentation of lectures	Introduction to the science of summer egetable production	The student's bility to evaluate he importance of oducing summer vegetable crops	5	First
	Explanation and presentation of lectures	Cultivation areas Vegetables and facilities necessary for production		5	Second
	Explanation and presentation of lectures	Influencing vironmental factors On production		5	Third
	planation and resentation of lectures	Production methods Seeds for crops Summer		5	Forth
	planation and resentation of lectures	Crop classification methods Summer greens		5	Fifth
	Explanation and presentation of lectures	Pest Control agricultural		5	Sixth
	Explanation and presentation of lectures	thods of growing, ducing and ilizing crops Summer vegetables		5	Seventh
	Explanation and presentation of lectures	Production of leafy (vegetables (basil		5	Eighth
	Explanation and presentation of lectures	Production of getable crops for the Solanaceae family		5	Ninth
	Explanation and presentation of	Production of		5	Tenth

	lectures	leguminous vegetables			
	Explanation and presentation of lectures	roduction of tomato vegetables		5	Eleventh
	Explanation and presentation of lectures	roduction of pepper vegetable crops		5	Twelfth
	Explanation and presentation of lectures	Production of vegetable crops For plants of the cucurbit family		5	irteenth
	Explanation and presentation of lectures	Production of rawberry vegetable crops		5	urteenth
	Explanation and presentation of lectures	Conservation and marketing art the product		5	Fifteenth

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%
* Final exam for the practical part 20%
* Final exam for the theoretical part 40%

Learning and teaching resources

Required textbooks (methodology, if any)	First and second vegetable production by Dr. Adnan Nasser Matloob and others.
Main references (sources)	
Recommended supporting books and references (scientific journals, reports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Beekeeping
Course code: PP 308
Semester/Year: Spring
The date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Dr. Dalal Tariq Hassan Al Ameri dalal.tareq@qu.edu.iq
Course objectives

* Introducing students to the most important requirements for successful beekeeping.

* Acquiring skills in good apiary management, diagnosing bee diseases and enemies, and ways to control them.

* Introducing the recipient to the most important honey bee products.

Teaching and learning strategies

*** Achieving educational outcomes goals that meet academic standards.**

*** Improving the quality of the academic program, both in light of available resources and striving to meet the requirements of academic accreditation.**

*** Seeking strategic connection with local and international academic bodies, which is reflected in the form of the program and joint academic degrees.**

*** The department is committed to providing modern technologies in presenting academic subjects in a way that helps the teacher deliver the objectives of the academic program.**

*** Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hours**	**week**
Exams, reports and homework	Explanation and presentation of lectures	Basics of bee science	he student's ability to evaluate the importance of knowledge of bee ience and a course in agricultural production	5	First
	Explanation and presentation of lectures	he nature of living of bee colonies		5	Second
	Explanation and presentation of lectures	External anatomy For bees		5	Third
	Explanation and presentation of lectures	Internal anatomy of bees		5	Forth
	Explanation and presentation of lectures	Honey bee breeds		5	Fifth
	Explanation and presentation of lectures	Honey bee breeds		5	Sixth
	Explanation and	Classification of		5	Seventh

	presentation of lectures	beehives			
	Explanation and presentation of lectures	Classification of beehives		5	Eighth
	Explanation and presentation of lectures	The life of sect members		5	Ninth
	Explanation and presentation of lectures	Expulsion		5	Tenth
	Explanation and presentation of lectures	Fake mothers		5	Eleventh
	Explanation and presentation of lectures	Division of bee colonies		5	Twelfth
	Explanation and presentation of lectures	Bee pests		5	hirteenth
	Explanation and presentation of lectures	Bee diseases		5	urteenth
	Explanation and presentation of lectures	The effect of pesticides on Bees		5	Fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Classroom reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Required textbooks (methodology, if any)	Raising honey bees and silkworms by Dr. Louay Karim Al-Naji
Main references (sources)	
Recommended supporting books and references (scientific journals,	

reports , etc.)	
ectronic references, Internet sites	

Course description form

Course name: Protected agriculture
Course code: HR 407
Semester/Year: Autumn
he date this description was prepared is 4/4/2024.
Available attendance formats: Weekly (mandatory)

Number of study hours (total) / number of units (total): 75 hours / 3 units

(Name of the course administrator (if more than one name is mentioned

Dr. Ali Sabah Alhasan
ali.alhasan@qu.edu.iq

Course objectives

* Knowing the basic concepts of protected agriculture.

* Knowing the importance of protected agriculture and methods of producing plants in various protected facilities.

* Understanding the modern methods used in managing greenhouses (heating and cooling)

* Knowing the theoretical and scientific basis used in the operation of greenhouses.

* Learn about the different methods of maintaining and renovating the protected facility.

Teaching and learning strategies

*** Achieving educational outcomes goals that meet academic standards.**

*** Learn about how to conduct crop service operations inside greenhouses.**

*** Improving the quality of the academic program, both in light of available resources and striving to fulfill academic accreditation requirements.**

*** Striving for a strategic connection with local and international academic bodies, in a way that is reflected in the form of the program and the joint academic degrees.**

*** The department is committed to providing modern technologies in presenting academic subjects in a way that helps the teacher deliver the objectives of the academic program.**

*** Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hours**	**week**
	Explanation and presentation of lectures	sics and overview Historical science of rotected agriculture	The student's ability to evaluate the importance of using eenhouses and their	5	First
	Explanation and presentation of lectures	tected agriculture d its reality in Iraq		5	Second
	Explanation and	Types of facilities		5	Third

Exams, reports and homework	presentation of lectures	agricultural used In protected agriculture	...role in rease agricultural production and achieve self-sufficiency		
	Explanation and presentation of lectures	ypes of covers used Covering homes		5	Forth
	Explanation and presentation of lectures	Means of protection ainst environmental conditions		5	Fifth
	Explanation and presentation of lectures	Heating greenhouses		5	Sixth
	Explanation and presentation of lectures	Cooling greenhouse		5	Seventh
	Explanation and presentation of lectures	Crop service operations		5	Eighth
	Explanation and presentation of lectures	CO2 control		5	Ninth
	Explanation and presentation of lectures	Pest Control agricultural) ((disease		5	Tenth
	Explanation and presentation of lectures	Pest Control ricultural(insects)		5	Eleventh
	Explanation and presentation of lectures	Pest Control agricultural (jungle		5	Twelfth
	Explanation and presentation of lectures	Integrated pest control		5	hirteenth
	Explanation and presentation of lectures	Production of ornamental plants		5	urteenth
	Explanation and presentation of lectures	Production of medicinal plants		5	Fifteenth

Course evaluation

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%

* Final exam for the practical part 20% * Final exam for the theoretical part 40%	
Learning and teaching resources	
Required textbooks (methodology, if any)	Vegetable production in air–ditioned environments by Dr. Adnan Nasser Matloob
Main references (sources)	
Recommended supporting books and references (scientific journals, ports , etc.)	
Electronic references, Internet sites	

Course description form

Course name: Plant tissue
Course code: HR 401

Semester/Year: Autumn

The date this description was prepared is 4/4/2024.

Available attendance formats: Weekly (mandatory)

Number of study hours (total) / number of units (total): 75 hours / 3 units

Name of the course administrator (if more than one name is mentioned)

Dr. Ahmed Fahim Jabbar Al-Jubouri.

Course objectives

* Knowing the basic concepts of plant tissue culture.

* Training students on preparing agricultural media and how to sterilize plant parts.

* Introducing students to the most important foundations of tissue culture techniques and plant cells.

* Introducing students to the most important techniques involved in tissue culture and training on them.

* Urging students to work collectively as one team.

Teaching and learning strategies

* **Achieving educational outcomes goals that meet academic standards.**

* **Learn about how to conduct crop service operations inside greenhouses.**

* **Improving the quality of the academic program, both in light of available resources and striving to meet the requirements of academic accreditation.**

* **Seeking strategic connection with local and international academic bodies, which is reflected in the form of program and joint academic degrees.**

* **The department is committed to providing modern technologies in presenting academic subjects in a way that helps the teacher deliver the objectives of the academic program.**

* **Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	**Hours**	**weeks**
Exams, reports and homework	Explanation and presentation of lectures	Basics of tissue and cell culture Vegetarianism	The student's ability to evaluate the importance of using tissue culture and its role in agricultural production	5	First
	Explanation and presentation of lectures	Factors affecting tissue culture		5	Second
	Explanation and presentation of lectures	Types of farms Histological		5	Third
	Explanation and presentation of lectures	e stages followed in Accurate multiplication		5	Forth
	Explanation and presentation of lectures	ctical applications For tissue culture		5	Fifth
	Explanation and presentation of lectures	duction and growth of callus		5	sixth
	Explanation and presentation of lectures	Hanging farms		5	seventh
	Explanation and presentation of lectures	Protoplast cultivation		5	Eighth
	Explanation and presentation of lectures	Producing virus-free plants		5	Ninth
	Explanation and presentation of lectures	ormation of somatic embryos		5	tenth
	Explanation and presentation of lectures	Cultivation of moths and pollen		5	Eleventh
	Explanation and presentation of lectures	Egg cultivation d ovaries		5	twelfth
	Explanation and presentation of lectures	Embryo nsplantation		5	hirteenth
	Explanation and presentation of lectures	Production of ondary compounds		5	urteenth

	lanation and sentation of tures	Mutation outside the body trict		5	fifteenth

Course evaluation
* Theoretical exam 22% * Practical exam 13% * Classroom reports and activities 5% * Final exam for the practical part 20% * Final exam for the theoretical part 40%

Learning and teaching resources	
Required textbooks (methodology, if any)	Basics of plant cell and tissue culture by Dr. Muhammad Abbas Salman.
Main references (sources	
Recommended supporting books and references (scientific journals, reports)	
Electronic references, Internet sites	

Course description form

Course name: Farm management
Course code: HR 411
Semester/Year: Autumn
The date this description was prepared is 4/4/2024
Available attendance formats: Weekly (mandatory)
Number of study hours (total) / number of units (total): 75 hours / 3 units
Name of the course administrator (if more than one name is mentioned)
Course objectives
* Teaching the student about the applications of farm management in agriculture in an economical manner and in comparison with the technical aspect. * The student's knowledge of economic laws and economic principles used in the field of agriculture. * Optimal employment of agricultural production elements. * How to achieve optimal levels of production. * How to achieve management administrative tasks on the farm.
Teaching and learning strategies
* **Achieving educational outcomes goals that meet academic standards**. * **Learn about how to conduct crop service operations inside greenhouses**. * **Improving the quality of the academic program, both in light of available resources and striving to meet the requirements of academic accreditation**.

* **Striving for a strategic connection with local and international academic bodies, in a way that is reflected in the form of the program and the joint academic degrees.**

* **The department is committed to providing modern technologies in presenting academic subjects in a way that helps the teacher deliver the objectives of the academic program.**

* **Conducting monthly and final theoretical and practical tests and adopting them as evaluation methods.**

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Hours	week
Exams, reports and homework	Explanation and presentation of lectures	General foundations in Farm management	The student's ity to evaluate the portance of using n management and ermine the economic ciency of the farm	5	First
	Explanation and presentation of lectures	Types of decisions The farm		5	second
	Explanation and presentation of lectures	Factors affecting Project selection Agricultural		5	third
	Explanation and presentation of lectures	Science jobs Farm management		5	Forth
	Explanation and presentation of lectures	sts and revenues Agricultural Production		5	fifth
	Explanation and presentation of lectures	Types of profits and types of losses		5	Sixth
	Explanation and presentation of lectures	nomic principles Used in farm management		5	seventh
	Explanation and presentation of lectures	The principle of substitution And replacement		5	Eighth
	Explanation and presentation of lectures	Principle of equal marginal returns		5	Ninth
	Explanation and presentation of	portunity costs and		5	Tenth

	lectures	opportunities			
	Explanation and presentation of lectures	Farm planning		5	Eleventh
	Explanation and presentation of lectures	Farm management methods		5	Twelfth
	Explanation and presentation of lectures	m management in Risk conditions		5	irteenth
	Explanation and presentation of lectures	iciency metrics Economic		5	urteenth
	Explanation and presentation of lectures	iciency metrics Economic		5	fifteenth

Course evaluation

* Theoretical exam 22%
* Practical exam 13%
* Classroom reports and activities 5%
* Final exam for the practical part 20%
* Final exam for the theoretical part 40%

Learning and teaching resources

Required textbooks (methodology, if any)	Farm business management by Dr. Hashem Alwan Al-Samarrai
Main references (sources	
Recommended supporting books and references (scientific journals, reports)	
Electronic references, Internet sites	