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

Academic Program and Course Description Guide

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: ……

Faculty/Institute: ……

Scientific Department: ……

Academic or Professional Program Name: ……

Final Certificate Name: ……

Academic System: ……

Description Preparation Date:

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

See the program .1
graduates in the field of agricultural Preparing Agriculture college Seeking sciences to work in government departments and benefit from specialization in the practical and applied field

Program message .2
quality and modern educational -The department's mission is to implement high systems to prepare a generation of agricultural engineers armed with scientific skills and researchers capable of solving all problems related to agricultural production , as as carrying out scientific studies and research that would raise the scientific and well .applied level of cadres specialized in the field of plant protection

Program Goals .3	
Graduating agricultural engineers with scientific and practical experience .capable of working in the private and public sectors	.1
Disseminating knowledge among the classes of society about the importance freedom from plant of the safety of agricultural products, such as their .diseases, chemical pesticide residues, etc	.2
Conducting advanced scientific research for the purpose of developing the agricultural sector, solving its problems, and combating pests, especially ative solutions to the use of research that contributes to finding altern .environmentally friendly chemical pesticides	.3
Developing agricultural awareness for farmers and agricultural workers and .disseminating modern information to obtain the best agricultural products	.4
nment agencies, such as extension and Cooperating with various gover research centers and agricultural directorates, in order to exchange experiences and knowledge and learn about the latest developments in the .field of agriculture and plant protection	.5

Program accreditation .4
nothing

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

Note that the vision, mission and goals of the department and college are announced in multiple places within the department building and published on its website within :the College of Agriculture website at the following link https://agriculture.uokerbala.edu.iq/wp/%d8%b1%d8%a4%d9%8a%d8%a9-%d9%88%d8%a7%d9%87%d8%af%d8% a7%d9%81-%d9%82%d8%b3%d9%85-%d8%a7%d9%84%d8%a8%d8%b3%d8%aa%d9%86%d8%a9-%d9%88%d9%87%d9%86%d8%af%d8%b3%d8%a9-%d8%a7%d9%84%d8%ad%d8%af

: the Plant Protection Department Structure of. 6				
comments	percentage	Study unit	Number of courses	Section structure
	%10.76	19	11	Enterprise requirements
	%39.94	70.5	22	College requirements
	%47.59	84	26	Department requirements
				summer training
				Other

Program description .7				
Credit hours		Course Name	Course Code	Year/level
practical	theoretical			
3	2	Principles of soil science	SOSC109	The first
_	2	Principles of agricultural economics	POSE102	
3	2	Principles of insects 1	GEIN110	
0	2	mathematics	MATH103	
0	2	English language 1	U0P114	

0	2	Democracy and human rights	UOP107	
3	0	applications 1	UOP106	
3	2	organic chemistry	ORCH104	
3	2	Principles of insects 2	GEIN111	
3	2	General animal	GZOE105	
3	2	General plant	BOTA101	
0	2	Crimes of the defunct Baath Party	BAAC102	
3	2	Principles of horticulture	HLGA205	
3	0	Computer applications 2	UOP112	
3	2	Principles of microbiology	FOMT212	the second
3	2	Plant classification	BOTA201	
3	2	Principles of field crops	FCPT213	
0	2	Agricultural guidance	AEPM211	
3	2	Plant physiology	PLP210	
3	2	Principles of animal production	APTE105	
3	2	Principles of statistics	PROS200	
3	0	Computer applications 3	UOB209	
3	2	Medical and veterinary insects	MVIC214	
3	2	Agricultural control machines and equipment	EAME102	
3	2	Structure and classification of insects	INTA215	
3	2	Plant nutrition	PLNU202	
0	3	Computer applications 4	UOB216	

3	2	Analytical chemistry	ANLC200	
0	2	Arabic	UOP213	
0	2	English language 2	UOP214	
0	2	Crimes of the defunct Baath Party	UO2402BPC	
3	2	Biochemistry	BIOC306	Third
3	2	Genetics	GETE304	
3	2	Insect physiology	INPH303	
3	2	Caecilians	CDCT305	
3	2	Fungi1	MYCO301	
3	2	Agricultural biotechnology	TAET210	
0	2	English language 3	UOB312	
3	2	Plant breeding	PLTB310	
3	2	Beekeeping	APTE309	
3	2	The bush and ways to combat it	WCET311	
3	2	Plant diseases	PDTE307	
3	2	Fungi 2	MYCO302	
3	2	Ecology	ECOO333	
3	2	Design and analysis of agricultural experiments	SAED310	
3	2	Field crop diseases	CDCT403	Fourth
3	2	Agricultural pesticides	PAEP405	
3	2	Insect ecology	IETE413	
3	2	Warehouse pests	SPCT402	
3	2	Biological resistance to pests	BCTE406	

3	2	Vegetable diseases and protected agriculture	FVDC408	
0	2	Study groups	SEMI414	
0	2	Graduation research project	AEPR407	
3	2	Fruit diseases	FVDC408	
0	2	Integrated pest management	IPMA409	
3	2	Field crop insects	CICT401	
3	2	Plant viruses	PLVI401	
3	2	Agricultural dream	AGAC411	
3	2	Orchard insects	OPCT412	
0	2	Graduation research project	AEPR415	
0	2	English language 4	UOM404	

Expected learning outcomes for the Field Crops Department	
1- education	
	qualified graduates Preparing Are able to work in various fields of agricultural theoretical and possess production concepts and practical skills through familiarity with the topics of crop production and improvement, weed control and the use of Modern technologies in developing production and providing graduates with social communication skills gAnd preparin

	scientific competencies Able to keep pace with scientific and technological developments in the field of field crop science. researchers And qualifying Able to conduct distinguished scientific research.
2- Research	
	Scientific solutions Ejaad -2 to agricultural production problems. new Innovating agricultural technologies Contributes to enhancing food security. Providing scientific knowledge Contributes to preserving the environment.
	3- the service
	agricultural Understanding the -3 society The importance of field crop science . qualified farmers Preparing To use the best agricultural practices. Achieving sustainable agricultural development It contributes to raising the standard of living of farmers.

Skills	
	modern The ability to understand and apply methods of prevention .them practically agricultural Dealing with -B2 . crises and problems foundations strong Building -B3 plant for students in And scientific protection
Value	

	abilities 'Developing students to share ideas

and learning strategies

- **Providing students with the basics and additional topics related to the previous learning outcomes of skills , to solve practical problems**
- **.Applying topics studied theoretically at the practical level**
- **practical lessons to conduct some applied research Asking students during . under the supervision of their teachers**
- **by academic staff laboratories Visit to practical**

Evaluation methods

- **. exams and monthly**
- **. And final exams Semester**
- **.Participation marks for competition questions for academic subjects**
- **. report writing Grades for homework and**
- **Delivering scientific seminars**

education institution							
Preparing the teaching staff		Requirements/special skills		Specialization		Scientific rank	Instructor's name
lecturer	angel			private	general		
	√			Insects insect) classificati (on	Plant Protection	Assistant Professor	Ali Abdul Hussein Karim
	√			Bacterial plant diseases	Plant Protection	.Mr	Raja Ghazi Abdel Mohsen
	√			Plant diseases/plant viruses	Plant Protection	.Mr	Aqeel Nazzal Berber
	√			Plant diseases/ mycotoxins	Plant Protection	.Mr	Yasser Nasser Hussein
	√			Plant diseases/plant viruses	Plant Protection	.Mr	Adnan Abdel Jalil Lahof
	√			An agricultural dream	Plant Protection	.Mr	Taha Musa Muhammad
	√			Insects storehous) (e insects	Plant Protection	Assistant Professor	Sinai Muslim Abdul Hussein
	√			An agricultural dream	Plant Protection	Assistant Professor	Mushtaq Talib Muhammad Ali
	√			Biochemistry	chemistry	Assistant Professor	Ibrahim was greeted by Kazem
	√			Plant diseases/fungi	Plant Protection	Assistant Professor	Mohsen Abdel Ali Mohsen
	√			Plant diseases/nematodes	Plant Protection	Assistant Professor	Istabraq Muhammad Abdel Reda

	√			Plant diseases/fungi	Plant Protection	Assistant Professor	Ola Hadi Jaafar
	√			Insect/biological resistance	Plant Protection	Teacher	Thamer Salman Jabr
	√			Plant diseases/fungi	Plant Protection	Teacher	Haider Abdel Hassan Ali
	√			Plant diseases/fungi	Plant Protection	Teacher	Kazem Hussein Kazem
	√			Insects/bees	Plant Protection	Teacher	Lina Qassem Eidan
	√			Insects	Plant Protection	Teacher	Ali Abdul Reda Haider
	√			Plant diseases	Plant Protection	Teacher	Warif Muhammad Hanoun
	√			Insects	Plant Protection	Teacher	Manar Ahmed Abbas
	√			Insects	Plant Protection	Teacher	Ashwaq Hossam Ibrahim
	√			Insects	Plant Protection	Teacher	Hussein Ali Baqir
	√			Plant diseases	Plant Protection	assistant teacher	Nour Kazem Nasser
	√			Insects	Plant Protection	Teacher	Raad Karim Mjbil
	√			Plant diseases	Plant Protection	assistant teacher	Alaa Talib Salem
	√			Insects	Plant Protection	assistant teacher	Ahmed Brir Ahmed
	√			An agricultural dream	Plant Protection	assistant teacher	Karar Abdel Zahra Mahdi
	√			Plant diseases	Plant Protection	assistant teacher	Nour Ali Khazal

	√			Insects	Plant Protection	assistant teacher	Muhammad Maitham Abdul Hay
	√			Insects	Plant Protection	assistant teacher	Zahraa Jawad Kazem
	√			Plant diseases	Plant Protection	assistant teacher	Maryam Hussein Jafat
	√			Plant diseases	Plant Protection	assistant teacher	Barir Ahmed Nasser
	√			Plant diseases	Plant Protection	assistant teacher	Zeina Mutlaq Mohsen
				Insects	Plant Protection	Assistant Professor	Samah Sami Suwaidan

Professional development
Orienting new faculty members
Professional development for faculty members

Acceptance standard .6

The most important sources of information about the program .7

1	Chemical pesticides in plant protection	-Dr. Khaled Muhammad Al ، Adel
2	General and applied entomology	Azzawi-Dr. Abdullah Falih Al ،
3	Insect ecology،	Dr. Moayed Ahmed Younis ، Dr. Mouloud Kamel Abd
4	Insect Ecology	Dr. Abdel Baqi Muhammad Hussein Dr. Mouloud Kamel Abd

8. Program development plan

1- Using new concepts in the field of plant protection and the use of electronic devices for the purpose of the scientific research

2-

for the The semester curriculum for the Plant Protection Department 2024-2023 year

the second semester (spring) **‘The first stage** **First semester (fall)**

Study unit	My work hour	My watch	Subject Name	Study unit	My work hour	My watch	Subject Name	T
3.5	3	2	organic chemistry	3.5	3	2	principles Soil	1
3.5	3	2	Principles of insects 2	2	-	2	of Principles agricultural economics	2
3.5	3	2	General animal	3.5	3	2	insects 1 of Principles	3
3.5	3	2	General plant	2	-	2	mathematics	4
3.5	3	2	Gardening principles	2	-	2	English language The 1	5
1.5	3	-	Computer applications 2	1	-	1	human Democracy and rights	6
1.5	18	10	the total	1.5	3	-	applications 1	7
				2	-	2	Arabic	
				17.5	9	13	the total	

the second semester (spring) **‘The second stage** **First semester (fall)**

Study unit	My work hour	My watch	Subject Name	Study unit	My work hour	My watch	Subject Name	T
3.5	3	2	and Medical veterinary entomology	3.5	3	2	Principles of microbiology	1
3.5	3	2	machines Control and equipment	3.5	3	2	Plant classification	2

3.5	3	2	Structure and of classification insects	3.5	3	2	Principles of field crops	3
3.5	3	2	nutrition Plant	2	-	2	Agricultural guidance	4
1	-	1	Freedom and democracy	3.5	3	2	Phosphorus is a plant	5
1.5	3	-	Computer 4 applications	3.5	3	2	animal production	6
3.5	3	2	Analytical chemistry	3.5	3	2	Principles of statistics	7
2	-	2	Arabic	1.5	3	-	Computer applications 3	8
2	-	2	is language The 2 English	24.5	21	14	the total	9
2	-	2	Crimes of the defunct Baath Party					
26	18	17	the total					

for the The semester curriculum for the Plant Protection Department 2024-2023 year

Second semester (spring) **Third stage First semester (autumn)**

Study unit	My work hour	My watch	Subject Name	Study unit	My work hour	My watch	Subject Name	T
3.5	3	2	Plant breeding	3.5	3	2	Biochemistry	1
3.5	3	2	Beekeeping	3.5	3	2	heredity	2
3.5	3	2	Jungles and ways to combat them	3.5	3	2	Insect phlegm	3
3.5	3	2	Plant diseases	3.5	3	2	Caecilians	4
3.5	3	2	2 Fungi	3.5	3	2	1 Fungi	5
3.5	3	2	Ecology	3.5	3	2	Agricultural biotechnology	6
3.5	3	2	Design and analysis of experiments	2	-	2	3 English language	7
24.5	21	14	the total	23	21	14	the total	

the second semester (spring) ،The fourth stage First semester (fall)

Study unit	My work hour	My watch	Subject Name	Study unit	My work hour	My watch	Subject Name	T
3.5	3	2	Fruit diseases	3.5	3	2	Field crop diseases	1
2	-	2	Integrated pest management	3.5	3	2	Pesticides	2
3.5	3	2	Field crop insects	3.5	3	2	Insect environment	3
3.5	3	2	Plant viruses	3.5	3	2	Store pests	4
3.5	3	2	An agricultural dream	3.5	3	2	Bioresistance	5
3.5	3	2	Orchard insects	3.5	3	2	Vegetable diseases and protected agriculture	6
1.5	3	--	research project	1	-	1	Seminars	7
2	-	2	4 English language	1.5	3	-	research project	8
23	18	14	the total	23.5	21	13	the total	

Course Name .1	
English 1	
Course Code .2	
U0P114	
Semester / year .3	
chapter , the first stage	
date Preparation this the description .4	
2024/4/4	
shapes the audience In-person lectures available .5	
My presence	
number hours Study (30) number Units (1) .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
M.D. Haider Abdel Hassan Al-Darab haider.abid@uokerbala.edu.iq	
Goals The decision	
Language and grammar	Goals Subject Scholarship
Strategies education And learning .9	
Reading, writing, speaking	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily and monthly exams	, Lectures discussions scientific , reports and films	Parts of plants	Parts of plants	2	1
Daily and monthly exams	, Lectures discussions scientific , reports and films	Reading and Language	Reading and Language	2	2
Daily and monthly exams	, Lectures ,discussions reports and	Grammar	Grammar	2	3

	scientific films				
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Life cycle of plant	Life cycle of plants	**2**	**4**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Reading	Reading	**2**	**5**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Language and grammar	Language and grammar	**2**	**6**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Composition of soil	Composition of soil	**2**	**7**
Daily and monthly exams	**, Lectures ,discussions reports and scientific films**	Reading	Reading	**2**	**8**
Daily and monthly exams	**, Lectures ,discussions reports and scientific films**	Language and grammar	Language and grammar	**2**	**9**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Manures and fertilizers	Manures and fertilizers	**2**	**10**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Reading	Reading	**2**	**11**
Daily and monthly exams	**, Lectures ,discussions reports and scientific films**	Language and grammar	Language and grammar	**2**	**12**
Daily and monthly exams	**, Lectures ,discussions reports and**	Control of plant disease	Control of plant disease	**2**	**13**

	scientific films				
Daily and monthly exams	**, Lectures ,discussions reports and scientific films**	Language	Language	**2**	**14**
Daily and monthly exams	**, Lectures discussions scientific , reports and films**	Animal world	Animal world	**2**	**15**
		Parts of plants	Parts of plants	**2**	

	evaluation The decision .11
	Sources Learning And teaching .12
	) Books decided Required (methodology that Found
English language	**the reviewer Home (Sources)**
Head way	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
	Electronic references, websites

Course description for the Arabic language subject

1. Course Name	
Arabic	
2. Course Code	
UOP213	
3. Semester / year	
First 2023	
4. date Preparation this the description	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
34	
name responsible The decision Academic (if more from name Mentionsed) And email	
millimeter . Waeed Hamed Yas waead.h@uokerbaia.edu.iq	
Goals The decision	
Goals Subject Scholarship	Course objectives -1 Developing a spirit of pride in the Arabic language. -2 Developing the student's linguistic skills. -3 Raising the professional and research level of students. -4 Developing the grammatical and literary abilities of university students.
9. Strategies education And learning	
The strategy	- Lecture, use of the blackboard, and presentation. - Demonstrations using diagrams and pictures. - Interactive discussion. - self education. - Organizing lectures prepared by students.

Course structure

Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	the week
Exams	theoretical	The importance of the Arabic language Why do we study the Arabic language and what is its importance? Why is the Arabic language called the ?language of the Qur'an What are the other names for ?the Arabic language	BSC	2	**1**
Exams	theoretical	Interpretation and memorization of twenty ,verses from Surat Yusuf ,while examining the words their connotations, and meanings, and highlighting the rhetorical and educational .aspects they contain	BSC	2	**2**
Exams	theoretical	Grammar rules (speech and (what it consists of What's the talk? What is the ,difference between speech speech and word? What are	BSC	2	**3**

		the parts of the word? What ,are the signs of nouns verbs, letters and their ?divisions			
Exams	theoretical	The verbal sentence and types of verbs in terms of ,immanence, transgression .correctness, and impairment	BSC	2	**4**
Exams	theoretical	Nominal sentence What is the nominal sentence? What is the definition of subject and predicate? What are the types of beginner? What are ?the types of news	BSC	2	**5**
Exams	theoretical	Abrogators of the nominal .sentence (abrogating verbs)	BSC	2	**6**
Exams	theoretical	,Letters similar to the verb their meanings, and parsing .examples of them	BSC	2	**7**
Exams	theoretical	First month exam	BSC	2	**8**
Exams	theoretical	Objects in the Arabic language (object, absolute (object, direct object	BSC	2	**9**

Exams	theoretical	,Numbers, their writing rules .and their parsing	BSC	2	**10**
Exams	theoretical	The :Arabic Literature beginnings of prose and its types, and memorizing selections from it Arabic poetry: The eras of Arabic poetry and its artistic and thematic features (The art of the article) while memorizing selected models	BSC	2	**11**
Exams	theoretical	Abu Al-Ala Al-Maarri (his life, topics, and literary works) with memorizing verses from the poem (All of (Life is Tired	BSC	2	**12**
Exams	theoretical	What is the life of the poet ?Abu Firas Al-Hamdani Reading the poem: (The Screaming Dove) with Analyze .precise movements and clarify the poem's verses	BSC	2	**13**

		Literary text: Poet: Abu . Firas Al-Hamdani			
Exams	theoretical	Rules for writing ta' and hamza in the Arabic .language	BSC	2	**14**
Exams	theoretical	The difference between dha and dha What do we mean by the phenomenon of difference between dha and dha? Why is the Arabic language called the language of Dhad? What ?`ḍād and ḍa	BSC	2	**15**
Exams	theoretical	Punctuation marks in the Arabic roll	BSC	2	**16**
Exams	theoretical	Second month exam	BSC	2	**17**

evaluation The decision .11	
- Theoretical semester exams (35%) - attendance (5%) - activities (5%) - assignments (5%) .final theoretical exam (50%)	
Sources Learning And teaching .12	
Books decided required (Methodology (that Found	
the reviewer The main one (Sources)	
The Holy Quran- **Explanation of Ibn Aqeel-** **. Al-Wajeez in the Arabic language-** **Collection of Arabic lessons -** **Arabic language rules, grammar-** **.and easy morphology** **. Spelling rules-**	
Scientific journals in the Arabic language .specializations	**Books And references Prevailing that recommend With it (Magazines (... Reports ,scientific**

Electronic references, websites	The many websites concerned with the Arabic-language, including YouTube and scientific research.

Course Name .1	
Computer 1	
Course Code .2	
UOP106	
Semester / year .3	
Chapter one, first stage	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
number hours Study (45) number Units (1.5) .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
millimeter. Alaa student Salem	**Alaa.t@s.uokerbala.edu.iq**
Goals The decision	
Goals Subject Scholarship	**The ability to use a computer and deal with important programs well**
Strategies education And learning .9	
The strategy	**Concept the talk For technology the information For the student And the turn prominent that You play it in area the computer Use last Technologies Modern**

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Calculator application exams	**Calculator application**	Office software application	technology the information he / Computer Features / Computer components / Computer types Computers Parts Main For computer Modular ProfileHardwar Input units Processing Centrality units Software Output	**3**	**1**

			Systems Employment And its types		
Exams application on Calculator	**Calculator application**	application Programs Office	Programs Organized Employment development Systems networks Information Information Network Networks Telephony And a scientist the E- computer Mail , Internet ,Mail Computer in Our life Daily Insurance And rights Copy And the law	3	**2**
Exams application on Calculator	**Calculator application**	application Programs Office	what he System Operating Windows XP versions isXP Windows the most important thing Differences Between them features The new Windows Windows in XP systemXP requirements stabilizing System Employment windows XP components the screen Editorial Windows XP For	3	**3**
Exams application on Calculator	**Calculator application**	application Programs Office	Dealing with Lists And icons Entrances Main) The system a) is icons program Windows Explorer panel Panel Control Off Employment	3	**4**

			urn Off The Computer Control With windows the list The quick one To surface the desk		
Exams application on Calculator	**Calculator application**	application Programs Office	road formation or construction Folder Delete Delete Folder list thefolder button Right For folders And files	3	**5**
Exams application on Calculator	**Calculator application**	application Programs Office	to explain Lists to explain ingredients the window tape Buttons or Icons	3	**6**
Exams application on Calculator	**Calculator application**	application Programs Office	painting Control List thePane button Right For Bar a bar Task	3	**7**
Exams application on Calculator	**Calculator application**	application Programs Office	features tape mission road an offer existing Start Start	3	**8**
Exams application on Calculator	**Calculator application**	application Programs Office	program Explorer	3	**9**
Exams application on Calculator	**Calculator application**	application Programs Office	what he Extension gesticulate she ? Its usefulness Uses some Keys For inKeyboard System Operating Windows XP	3	**10**
Exams application on Calculator	**Calculator application**	application Programs Office	Programs Hidden in Use some Programs Appendix with Windows	3	**11**
Exams application on Calculator	**Calculator application**	application Programs Office	program Notepad program WordPad	3	**12**
Exams application on Calculator	**Calculator application**	application Programs Office	program Paint Methods registration Discs CD-ROM	3	**13**

			Windows XP In without inauguration Programs especially Burning Burning CD		
Exams application on Calculator	**Calculator application**	application Programs Office	what he System Files that Advise By using it in Windows windows XP NTFS) or(FAT32 and why ? road to improve Appearance of Lines the screen when Use Devices the flatLCD offer panel or Devices Computer Laptop Portable Disk Dynamic	3	**14**
Exams application on Calculator	**Calculator application**	application Programs Office	Options start employment Windows Windows XP What he wall Fire Wall protection available in XP Windows and how ?Complete foot Release Final XP For Windows	3	**15**
Exams application on Calculator	**Calculator application**	application Programs Office	technology the information he / Computer Features / Computer Components / Computer types Computers Parts Main For computer Modular ProfileHardwar Input units Processing Centrality units		

			Software Output Systems Employment And its types		

evaluation The decision .11					
	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%30	%20	%5	%20	%25

	Sources Learning And teaching .12
	) Books decided Required (methodology that Found
book the computer Automatic And its components	the reviewer Home (Sources)
book to learn basics the computer	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Sciences Computer Automated	Electronic references, websites

Course Name .1
Computer 2
Course Code .2
UOP112
Semester / year .3
Chapter one, first stage
date Preparation this the description .4
2024/4/4
shapes the audience Available .5
My presence
number hours Study (45) number Units (1.5) .6
name responsible The decision Academic (if more from name Mentionsed) And email
millimeter. Alaa student Salem Alaa.t@s.uokerbala.edu.iq
Goals The decision

Goals Subject Scholarship	**that He is requester able on The Worker with ProgramsMicrosoft office**
Strategies education And learning .9	
The strategy	**clarification How Use all from program Office With what In it (Word , excel, PowerPoint) and the Internet**

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Calculator application exams	**Calculator application**	Office software application	and2007 Word its interface the program button Button Office and its contents Tapes the program	**3**	**1**
Exams application on Calculator	**Calculator application**	application Programs Office	Tab Planning Layout Page and its groups Tab) References and) sources their collections	3	**2**
Exams application	**Calculator application**	application Programs Office	Tab Mailings groups Taband itsand Review	3	**3**

on Calculator			groups Tab its View and groups Dealing with Objects included in the document		
Exams application on Calculator	**Calculator application**	application Programs Office	tape Tab coordination tools Picture bar TabTool coordination tools Drawing Tools	3	**4**
Exams application on Calculator	**Calculator application**	application Programs Office	tape Tab design from tools Tools Equation Bars Scrolling Horizontal And the vertical And the rulers in uses2007 Word some Keys The inkeyboard Office 2007 program shading (Action Select)	3	**5**
Exams application on Calculator	**Calculator application**	application Programs Office	introduction Introductory For Excel 2007 ribbons Tab ingredients Interface the program button Office	3	**6**
Exams application on Calculator	**Calculator application**	application Programs Office	some Concepts And terminology 2007 in Excel Tab the page Home Home and its groups Tab Inserts and groupstheir	3	**7**
Exams application on Calculator	**Calculator application**	application Programs Office	Tab Planning Page Page TabLayout) Formulas) equations Formula	3	**8**
Exams application on Calculator	**Calculator application**	application Programs Office	Interface the program some Concepts used in Power Point	3	**9**

			Tab the2007 page Home and itsHome groups		
Exams application on Calculator	**Calculator application**	application Programs Office	tape Tab coordination tools Drawing tabTools Inserts and groupstheir and Tab Design its collections Tab Animations groupstheir and	3	**10**
Exams application on Calculator	**Calculator application**	application Programs Office	Tab an offer TabShow Slide with View Deal Slides Print Slides	3	**11**
Exams application on Calculator	**Calculator application**	application Programs Office	what he Internet Internet overview on Stages Historicism To develop Internet benefits And advantages network Internet some Terminology the mission identification networks means Access to the network Globalism Internet And the intranet Faces Internet Browsers And the mail Electronic	3	**12**
Exams application on Calculator	**Calculator application**	application Programs Office	search in the network Species Files on Internet Engines search search on Locations Arabic means Access to Internet (wired) supplies Connection	3	**13**

			With a network andURL Internet ISP address browser Internet Internet Browser components window Browser Internet Most important Features existing in program Browser Explorer Internet		
Exams application on Calculator	**Calculator application**	application Programs Office	Connection With a document Other Methods moving in to Pages Other abbreviation the pictures from Pages Web Mobility between Pages Web existing Pages Favorite History Use The key is stored And save the information from Internet Exit from program Browser Mail - Mechanical E a job send Mail e Messages	3	**14**
Exams application on Calculator	**Calculator application**	application Programs Office	Phase send Messages by mail Electronic Programs Beneficiary Mail Electronic Attachment Title Mail parts Electronic Mail Electronic the document to Web (Free) Registration in Sites Mail Free Problems that Facing user Internet Viruses	3	**15**

			to treatto How Danger Viruses More dangerous Species Viruses		
Exams application on Calculator	**Calculator application**	application Programs Office	and2007 Word its interface the program button Button Office and its contents Tapes the program		

evaluation The decision .11					
	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%30	%20	%5	%20	%25
Sources Learning And teaching .12					
) Books decided Required (methodology that Found					
the reviewer Home (Sources)	**book the computer Automatic And its components**				
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	**book to learn basics the computer**				
Electronic references, websites	**Sciences Computer Automated**				

.1 Course Name
Democracy and human rights
.2 Course Code
UOP107
.3 Semester / year
The first stage, the second semester
.4 date Preparation this the description
2024/4/4
.5 shapes the audience Available
My presence
.6 number hours Study (30) number Units (2)
name responsible The decision Academic (if more from name Mentionsed) And email
Khadir Yasin Khadir kudir.yassen@uokerbala.edu.iq
Goals The decision

Goals Subject Scholarship	rumor culture rights Human And defense on principles And the rules the basic in life

.9 Strategies education And learning

The strategy	The definition of human rights and the origin and development of the concept of human rights An overview of human rights in ancient civilizations (Mesopotamia and the Nile Valley civilization).

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	2	Definition of . human rights	Definition of . human rights	Lectures	Paper exam
2	2	The origin and development of the concept of human rights	The origin and development of the concept of human rights	Lectures	Paper exam
3	2	A glimpse of human rights in ancient civilizations Mesopotamia) and the Nile Valley civilization).	A glimpse of human rights in ancient civilizations Mesopotamia) and the Nile Valley civilization).	Lectures	Paper exam

Paper exam	**Lectures**	Human rights in heavenly religions	Human rights in heavenly religions	2	**4**
Paper exam	**Lectures**	Human rights and their relationship to other variables	Human rights and their relationship to other variables	2	**5**
Paper exam	**Lectures**	The relationship of rights to law	The relationship of rights to law	2	**6**
Paper exam	**Lectures**	The relationship of rights and duties	The relationship of rights and duties	2	**7**
Paper exam	**Lectures**	The most important basic human rights	The most important basic human rights	2	**8**
Paper exam	**Lectures**	The impact of globalization on human rights	The impact of globalization on human rights	2	**9**
Paper exam	**Lectures**	The most important international human rights declarations and conventions	The most important international human rights declarations and conventions	2	**10**
Paper exam	**Lectures**	Universal Declaration of Human Rights in 1948	Universal Declaration of Human Rights in 1948	2	**11**
Paper exam	**Lectures**	Cairo Declaration on Human Rights in Islam	Cairo Declaration on Human Rights in Islam	2	**12**
Paper exam	**Lectures**	Human rights in international conventions and laws	Human rights in international conventions and laws	2	**13**
Paper exam	**Lectures**	International Covenant on Civil and Political Rights	International Covenant on Civil and Political Rights	2	**14**
Paper exam	**Lectures**	Human rights and their relationship to life variables	Human rights and their relationship to life variables	2	**15**

evaluation The decision .11

	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%50				%50

Sources Learning And teaching .12

	) Books decided Required (methodology that Found
	the reviewer Home (Sources)
Islam in the battle of civilization	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
The intellectual and the authority	**Electronic references, websites**

Course name: General Botany Theory .1	
BOTA1 Course code .2	
Second semester / first stage / 2023-2024 Semester / year .3	
date Preparation this Description 2/1/2024 .4	
shapes the audience Available, attendance required .5	
number hours Academic (total) number Units (total): 5 hours per week. Number of units: 3.5 .6	
name responsible The decision Academic (if more from name Mention and email: Dr. Suzan Muhammad Khudair (suzan.mohammed@uokerbala.edu.iq	
Goals The course aims to familiarize the student with the science of botany and its various branches, and to familiarize himself with the basic principles of botany in terms of appearance, internal structure, and the most important environmental factors affecting this. The student also understands the basics of plant classification and the taxonomic status of the kingdoms of living organisms, and to give the student the necessary skill to distinguish between plants and other living organisms.	
Goals Subject Scholarship	Enabling students to know the different parts of the plant, the types of plants, how to distinguish between them, and the environmental factors affecting them
Strategies education And learning .9	
The strategy	-1 Focus on agricultural aspects by linking the practical and theoretical aspects -2 Field visits: to some nurseries for the purpose of distinguishing between monocotyledonous and dicotyledonous plants and classifying plants according to their shapes. -3 Using plant samples and drying them, as well as enabling the student to distinguish between the samples -3 E-learning resources: providing video clips and various activities

Active Learning: Group Discussions Urging students into group discussions -4 Continuous assessment: assignments, reports, and tests to determine the extent of students' understanding and comprehension -5 Linking botany to all other sciences -6	

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily and monthly exams	Lectures , discussions scientific , reports and films	A historical overview of botany and the study of the importance of plants	Knowledge	5	1
Daily and monthly exams	Lectures , discussions scientific , reports and films	Sections of botany, plant characteristics and types	Knowledge	5	2
Daily and monthly exams	Lectures , discussions scientific , reports and films	Gymnosperms and angiosperms	Knowledge	5	3
Daily and monthly exams	Lectures , discussions scientific , reports and films	Monocot and dicotyledonous plants	Knowledge	5	4
Daily and monthly exams	Lectures , discussions scientific , reports and films	Organic chemical compounds in plants and their types	Knowledge	5	5
Daily and monthly exams	Lectures , discussions scientific , reports and films	Inorganic chemical compounds in plants and their types	Knowledge	5	6
Daily and monthly exams	Lectures , discussions scientific , reports and films	Factors affecting plant growth: water, light, temperature,	Knowledge	5	7

		nutrients, and organizations			
Daily and monthly exams	Lectures , discussions scientific , reports and films	Plant groups, their shapes and types, bacteria and fungi Lichens and algae	Knowledge	5	8
Daily and monthly exams	Lectures , discussions scientific , reports and films	The plant cell, its components, shapes and composition	Knowledge	5	9
Daily and monthly exams	Lectures , discussions scientific , reports and films	Plant tissues, their shapes and features	Knowledge	5	10
Daily and monthly exams	Lectures , discussions scientific , reports and films	Roots, their functions and types	Knowledge	5	11
Daily and monthly exams	Lectures , discussions scientific , reports and films	Stems: their types, shapes and functions	Knowledge	5	12
Daily and monthly exams	Lectures , discussions scientific , reports and films	Leaves, their structure, parts of the leaf, their structure and modifications	Knowledge	5	13
Daily and monthly exams	Lectures , discussions scientific , reports and films	Flowers, flower parts, floral symmetry, inflorescences and their types	Knowledge	5	14
Daily and monthly exams	Lectures , discussions scientific , reports and films	The fruit, the seed , heredity, and development in the plant	Knowledge	5	15

evaluation The decision Theoretical semester exams are 30%. The practical semester exams are 15%. The daily exams are 5%. The practical final exam is 20%. The theoretical final exam is 30%.	.11
Sources Learning And teaching	.12
Books decided Required ((methodology that Found	General Plant - Shawqi et al. 1979
the reviewer Home (Sources)	Al-Sahar, Qasim Fouad, division of botany, 1997, general botany, Mujahid, Ahmed Muhammad, 1996.
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	Iraqi academic scientific journals
Electronic references, websites	Websites concerned with plant sciences

.1 Course Name	
General animal	
.2 Course Code	
GZOE105	
.3 Semester / year	
The first stage, the second semester	
.4 date Preparation this the description	
2024/4/4	
.5 shapes the audience Available	
My presence	
.6 number hours Study (75) number Units (3.5)	
name responsible The decision Academic (if more from name Mentionsed) And email	
righteous slave the one Mahdi saleh.abdalwahed@uokerbala.edu.iq	
Goals The decision	
Goals Subject Scholarship	Introducing students to the importance of animal science and its relationship to agricultural sciences
.9 Strategies education And learning	
The strategy	,Identify the most important animals of the animal kingdom their structure and classification

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1		A brief overview of the history of zoological studies	Requirements for studying zoology :in the laboratory installing the ,microscope preparing glass slides, and preserving laboratory models	Lectures	Paper exam
2		Animal science and its relationship with ,other sciences especially	,The animal cell its components and functions of its organelles	Lectures	Paper exam

			agricultural sciences		
Paper exam	**Lectures**	Methods of cell division: indirect division and meiosis	,The origin of life self-generation and special ,creation cosmological theory and . natural theory		**3**
Paper exam	**Lectures**	Division of :animals invertebrates and vertebrates	The cellular structure of the body of an organism, the cell wall, the nucleus and its parts, the cytoplasm and its living and non-living components		**4**
Paper exam	**Lectures**	Study of simple epithelial tissues	,Biomolecules protoplasm and its natural and chemical ,properties, water ,protein , carbohydrates fats, nucleic acids, their presence and the nature of their . structure		**5**
Paper exam	**Lectures**	Germ cells and somatic cells	, Cell divisions mitosis , mitosis Reductive		**6**
Paper exam	**Lectures**	Organic evolution	Classification of the animal kingdom and the principles used to divide animals into different phyla		**7**
Paper exam	**Lectures**	Life and its manifestations	, primary division its general characteristics and different types, and its relationship to animals and plants		**8**
Paper exam	**Lectures**	Unicellular) animals (protozoa	The phylum of flatworms, its types, types, and its relationship to		**9**

			animals and plants		
Paper exam	**Lectures**	the origin of life	Nematode phylum, general ,characteristics types and ,characteristics examples of worms that infect animals and plants		**10**
Paper exam	**Lectures**	Animal parasites And the human being	The phylum of annelids and nematodes, their general characteristics represented by some species widespread in agricultural soils and their relationship to agricultural .production		**11**
Paper exam	**Lectures**	Animals harmful to plants	The arthropod phylum, its general characteristics and types		**12**
Paper exam	**Lectures**	Rodents harmful to plants	The phylum Chordata, its main characteristics and aspects of life such as ,digestion absorption , blood ,circulation ,respiration excretion, and the .nervous system		**13**
Paper exam	**Lectures**	Aquatic animals in the Iraqi environment	Chemical coordination in ,the organism hormones and ,their nature pituitary ,hormones thyroid hormones, and parathyroid hormones		**14**
Paper exam	**Lectures**	General Review	adrenergic , hormones		**15**

			reproductive .hormones ,Reproduction fertilization and fetal growth		

evaluation The decision .11					
	Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests
	%30	%20	%5	%20	%25
Sources Learning And teaching .12					
) Books decided Required (methodology that Found					
the reviewer Home (Sources)					
animal general cell Animalism					
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific					
Animal science and its relationship to agricultural sciences					
Electronic references, websites					
Animal study					

.1 Course Name
mathematics
.2 Course Code
MATH103
.3 Semester / year
The first stage, the first semester
.4 date Preparation this the description
2024/4/4
.5 shapes the audience Available
My presence
.6 number hours Study (30) number Units (2)
name responsible The decision Academic (if more from name Mentionsed) And email
Ahmed Jabbar Abbas ahmed.jabbar@uokerbala.edu.iq
Goals The decision
Goals Subject Scholarship
.9 Strategies education And learning
The strategy

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	2	Orthogonal matrices	Orthogonal matrices	Lectures	Paper exam
2	2	Square matrices	Square matrices	Lectures	Paper exam
3	2	Conjugate matrix	Conjugate matrix	Lectures	Paper exam
4	2	Determinants	Determinants	Lectures	Paper exam
5	2	Cramer's rule	Cramer's rule	Lectures	Paper exam
6	2	Semester exam	Semester exam	Lectures	Paper exam
7	2	Derivatives	Derivatives	Lectures	Paper exam
8	2	Trigonometric functions	Trigonometric functions		Exam Paper

Paper exam	Lectures	Exponential functions	Exponential functions	2	9
Paper exam	Lectures	Logarithmic functions	Logarithmic functions	2	10
Paper exam	Lectures	integration	integration	2	11
Paper exam	Lectures	Integration of trigonometric functions	Integration of trigonometric functions	2	12
Paper exam	Lectures	Integration of exponential functions	Integration of exponential functions	2	13
Paper exam	Lectures	Integration of logarithmic functions	Integration of logarithmic functions	2	14
Paper exam	Lectures	Semester exam	Semester exam	2	15

11. evaluation The decision

Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests
%30	%20	%5	%20	%25

12. Sources Learning And teaching

) Books decided Required (methodology that Found	
the reviewer Home (Sources)	Foundations of Algebra and Linear Algebra, Dr. Mahmoud Abdel Azim Saud
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	book education Thinking in mathematics
Electronic references, websites	book introduction in theory Possibilities

Course Name .1	
organic chemistry	
Course Code .2	
ORCH104	
Semester / year .3	
The first stage, the second semester	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
) number hours Study (75) practical/theoretical number Units .6 (3.5	
name responsible The decision Academic (if more from name Mentionsed) And email	
Kadium.Ibrahem@uokerbala.edu.iq Ibrahim His turn Kazem	
Goals The decision	
He recognizes requester on Most important Branches science Chemistry and he branch Chemistry Membership please on knowledge , classification the main For its vehicles Membership And study it	Goals Subject Scholarship
Strategies education And learning .9	
Most important Paths Interactions Chemical For vehicles Membership like substitution And Delete	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
evaluation Oral And Release during lecture from during questions And Answers	My presence	organic chemistry	Identify and classify organic chemistry and the most important bonds between molecules	+ 2n 3p	1

evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Classification and naming of organic compounds**	+ 2n 3p	**2**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Linear and cyclic alkanes and their substituted groups**	+ 2n 3p	**3**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Unsaturated organic compounds: linear and cyclic alkenes**	+ 2n 3p	**4**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**First month exam**	+ 2n 3p	**5**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Unsaturated organic compounds alkynes**	+ 2n 3p	**6**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Aromatic hydrocarbons**	+ 2n 3p	**7**

evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Reaction pathways/substitution reactions and deletion reactions**	+ 2n 3p	**8**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Halides**	+ 2n 3p	**9**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Alcohols**	+ 2n 3p	**10**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Ethers**	+ 2n 3p	**11**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Aldehydes and ketones**	+ 2n 3p	**12**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Carboxylic acids**	+ 2n 3p	**13**

evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**A esters And amides**	+ 2n 3p	**14**
evaluation Oral And Release during lecture from during questions And Answers	My presence	**organic chemistry**	**Monthly exam**	+ 2n 3p	**15**

evaluation The decision .11	
	Sources Learning And teaching .12
book basics Chemistry Membership	**) Books decided Required (methodology that Found**
Comprehensive in Chemistry Membership	**the reviewer Home (Sources)**
Comprehensive in Chemistry Membership	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
	Electronic references, websites

Course Name .1	
Principles of agricultural economics	
Course Code .2	
POSE102	
Semester / year .3	
chapter , the first stage	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
number hours Study (30) number Units (2) .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
razzaq . Provider His turn Give it to him Brak ateha@uokerbala.edu.iq	
Goals The decision	
Foundations of applying economic theory in the agricultural sector	**Goals Subject Scholarship**
Strategies education And learning .9	
identification Students Importantly science Economy Agricultural And his role in Activity Agricultural And how Application	**The strategy**

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Paper exam	Lectures	principles Economy agricultural	Introductory information	2	1
Paper exam	Lectures	principles Economy agricultural	introduction	2	2
Paper exam	Lectures	principles Economy agricultural	Agricultural economics	2	3
Paper exam	Lectures	principles Economy agricultural	The emergence of the agricultural economy through economics	2	4
Paper exam	Lectures	principles Economy agricultural	Agriculture and its characteristics	2	5

Paper exam	**Lectures**	principles Economy agricultural	The role of agricultural activity in economic construction	2	**6**
Paper exam	**Lectures**	principles Economy agricultural	The workforce in the agricultural sector	2	**7**
		principles Economy agricultural	Foundations of applying economic theory in the agricultural sector	2	**8**
Paper exam	**Lectures**	principles Economy agricultural	Branches of agricultural economics	2	**9**
Paper exam	**Lectures**	principles Economy agricultural	Economics of agricultural production	2	**10**
Paper exam	**Lectures**	principles Economy agricultural	Agricultural prices	2	**11**
Paper exam	**Lectures**	principles Economy agricultural	Agricultural - marketing agricultural financing and credit	2	**12**
Paper exam	**Lectures**	principles Economy agricultural	Farm - management agricultural cooperation	2	**13**
Paper exam	**Lectures**	principles Economy agricultural	- Land Economics Agricultural Policy and Agrarian Reform	2	**14**
Paper exam	**Lectures**	principles Economy agricultural	The socialist trend in setting agricultural policy and development plans	2	**15**

evaluation The decision .11

	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%50				%50

Sources Learning And teaching .12

	) Books decided Required (methodology that Found
the theory Economic Partial	the reviewer Home (Sources)
Business Management Mz Parish	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
administration Farmer between the theory And the application	Electronic references, websites

Course Name .1	
Principles of insects / 1	
Course Code .2	
GEIN110	
Semester / year .3	
Second semester 2023-2024	
date Preparation this the description .4	
2023	
shapes the audience Available .5	
My presence	
(3.5) number hours Study (75) number Units .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
taha.m@uokerbala.edu.iq a. Taha Musa Muhammad Mansour Al-Suwaidi	
Goals The decision	
Goals Subject Scholarship	The material includes a historical .1 . overview of entomology Identify the most important .2 layers of the body wall and the appendages and protrusions that make up the body wall The most important appendages .3 are the head, chest and abdomen
Strategies education And learning .9	
The strategy	.1 Focus on the most important insect pests in the field : Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the most important types of insects and the . symptoms of infection they cause in the most important economic crops .2 Use of technology: Electronic learning resources: Providing electronic learning resources, such . PPt l as videos .3 Active learning: Group discussions: Encouraging students to discuss the most important types of insects, their damage, the crops they infect, and methods of .combating them .4 Continuous evaluation: Assignments and Quizzes: Assess students' understanding through .assignments and quizzes .5 Linking entomology to other sciences and the most important differences between them

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Paper exam	Lectures	A historical overview of insects in the world and Iraq and the factors that helped them .survive and spread	Introduction and historical review	5	1

Paper exam	Lectures	The economic importance of .insects	Understand the economic importance of insects	5	2
Paper exam	Lectures	The external appearance of insects	Knowing the external appearance of insects	5	3
Paper exam	Lectures	Layers of the insect body wall	Know the components of the insect body wall	5	4
Paper exam	Lectures	Head appendages, mouth parts, eyes and antennae	Illustrating the appendages of the head, mouth parts, eyes, and antennae	5	5
Paper exam	Lectures	Thoracic appendages, wings and legs	Illustration of the appendages of the chest, wings and legs	5	6
Paper exam	Lectures	Abdominal appendages and reproductive system	Illustration of abdominal appendages and reproductive system	5	7
		Monthly exam	Monthly exam	5	8
Paper exam	Lectures	Methods of reproduction in insects	Knowledge of the most important methods of reproduction in insects	5	9
Paper exam	Lectures	Moulting	Know how molting occurs and its importance	5	10
Paper exam	Lectures	Change or formation	Know the most important types of change	5	11
Paper exam	Lectures	Feeding habits of insects	Know how insects get their food	5	12
Paper exam	Lectures	Excretion in insects	Explain how insects get rid of their body waste	5	13
Paper exam	Lectures	General methods of pest control	Know the most important methods of pest control	5	14
		Monthly exam	Monthly exam	5	15

evaluation The decision .11	
	Sources Learning And teaching .12
Basics of entomology .1 General entomology .2	Books decided Required ((methodology that Found
General Entomology, Ibrahim Kadouri .Qaddo, 1984	the reviewer Home (Sources)

Arab Plant Protection Journal, Karbala Journal of Agricultural Sciences	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Electronic reference for informatics	Electronic references, websites

1. Course Name	
Principles of insects / 2	
2. Course Code	
GEIN111	
3. Semester / year	
Second semester 2023-2024	
4. date Preparation this the description	
2023	
5. shapes the audience Available	
My presence	
6. (3.5) number hours Study (75) number Units	
name responsible The decision Academic (if more from name Mentionsed) And email	
a. Taha Musa Muhammad Mansour Al-Suwaidi taha.m@uokerbala.edu.iq	
Goals The decision	
Goals Subject Scholarship	1. Includes a historical overview of insect classification. 2. The most important orders of wingless insects and insects with internal and external wings, as well as the internal anatomy of insects
9. Strategies education And learning	
The strategy	1. Focus on the most important insect pests in the field: Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the most important types of insects and the symptoms of infection they cause in the most important economic crops. 2. Use of technology: Electronic learning resources: Providing electronic learning resources, such as videos PPt. 3. Active learning: Group discussions: Encouraging students to discuss the most important types of insects, their damage, the crops they infect, and methods of combating them. 4. Continuous evaluation: Assignments and Quizzes: Assess students' understanding through assignments and quizzes. 5. Linking entomology to other sciences and the most important differences between them

10. structure The decision

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Paper exam	Lectures	A historical overview of insect classification and the most important taxonomic features	Know a brief history of insect classification	5	1
Paper exam	Lectures	The most important characteristics of	Learn about the most important	5	2

		wingless, endowing and external insects	characteristics of wingless, inner-winged and outer-winged insects		
Paper exam	Lectures	The most important orders of wingless insects	Knowledge of the most important insect orders	5	3
Paper exam	Lectures	The most important orders of endowing insects	Knowledge of the most important insect orders	5	4
Paper exam	Lectures	Completing the most important orders of endowing insects	Knowledge of the most important insect orders	5	5
Paper exam	Lectures	An overview of the internal anatomy of insects	Knowledge of the most important internal organs of insects	5	6
Paper exam	Lectures	The nervous system in insects	clarification the Components of nervous system in insects	5	7
		Monthly exam	Monthly exam	5	8
Paper exam	Lectures	Digestive system in insects	Explaining the components of the digestive system in insects	5	9
Paper exam	Lectures	Respiratory system in insects	Explaining the components of the respiratory system and methods of breathing in insects	5	10
Paper exam	Lectures	The excretory system in insects	Knowledge of the excretory system in insects and methods of waste disposal	5	11
Paper exam	Lectures	The circulatory system in insects	Knowledge of the components of the circulatory system in insects	5	12
Paper exam	Lectures	The most important glands in insects	Explaining the types of glands in insects and their relationships to moulting and metamorphosis	5	13
Paper exam	Lectures	How are pesticides ?divided	Knowledge of the most important pesticides used in insect control	5	14
		Monthly exam	Monthly exam	5	15

evaluation The decision .11	
	Sources Learning And teaching .12

Basics of entomology .1 General entomology .2	Books decided Required ((methodology that Found
General Entomology, Ibrahim Kadouri .Qaddo, 1984	the reviewer Home (Sources)
Arab Plant Protection Journal, Karbala Journal of Agricultural Sciences	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Electronic reference for informatics	Electronic references, websites

Course Name .1	
Principles of sixty	
Course Code .2	
HLGA205	
Semester / year .3	
The first stage, the second semester	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
(3.5) number hours Study (75) number Units .6	
name responsible The decision Academic (if more from name Mention and email (	
muntadher.m@uokerbala.edu.iq M. M. Muntadher Muhammad Rahif	
Goals The decision	
Introducing students to orchards, gardens, and vegetative propagation methods	Goals Subject Scholarship
Strategies education And learning .9	
identification Students In the gardens And gardens And knock Too much The vegetative	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
		Identify the different fruit trees, distinguish between them, and learn about the nature of the trees' bearing and flowering for each of them, mentioning the scientific and English names and the botanical family of the .important ones	Concept Gardening , classification the plants gardening, Brief Historical on Gardening in Iraq	5	1

		Establishing fruit orchards, the conditions that must be taken into account when establishing them, tree planting methods, and planting distances	Fruit : definition the fruit, to divide trees the fruit, factors Environmental And her relationship Successfully agriculture trees the fruit These include : temperature, Humidity, wind, the light And factors the soil	**5**	**2**
		A brief explanation of the processes of raising and pruning fruit trees	Increase trees the fruit, Excessiveness Sexual And a lot Asexual	**5**	**3**
		Training on methods of sexual propagation by seeds for some vegetable and fruit crops	Develop Comforts And stillness in trees the fruit, construction Orchards the fruit	**5**	**4**
		Training on asexual propagation methods (stems, layering, crabs, tubers, cuttings, segmentation,) bulbs	Al-Khidr : definition Crops The greens, to divide Crops The greens	**5**	**5**
		Identifying the different vegetable crops (seeds) and the scientific names of the vegetable crops widely cultivated in Iraq	factors Environmental And her relationship Successfully agriculture The greens different	**5**	**6**
		Semester exam	Methods agriculture Crops The greens	**5**	**7**
		Training on how to prepare and prepare the land for planting crops, such as making tillers	Agriculture Protected For crops The greens	**5**	**8**

		Planting diyas in a sustainable place, fertilizing plants	Sovereignty Apical in the plants	**5**	**9**
		Practical training on how to fertilize fruits and vegetables, identifying annual flowers, trees and shrubs in the department, and explaining methods of .multiplying them	Adornment : definition plants Decorations , to divide plants Decorations	**5**	**10**
		Getting to know some climbers, bulbs, and hedge plants, methods of propagating them, and the scientific names of some of them	factors Environmental And her relationship Successfully agriculture plants Decorations	**5**	**11**
		Learn about the department's cold stores and methods of storing horticultural crops	Flats Green	**5**	**12**
		Division of fruits and vegetables from a botanical, physiological and anatomical perspective	Trade And care And store The results Gardening	**5**	**13**
		Identify the most important physical and chemical characteristics that determine ripening time and detection . methods	growth And develop And he matured The fruits And types The fruits	**5**	**14**
		General Review	review General	**5**	**15**

evaluation The decision .11

	Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests
	%30	%20	%5	%20	%25

	Sources Learning And teaching .12
principles science Gardening **Principle of Horticulture**	**Books decided Required (** **(methodology that Found**
	the reviewer Home (Sources)
Politics in science Gardening **And engineering Gardens**	**Books And references Prevailing** **that recommend With it (Magazines** **(.... Reports ,scientific**
engineering And design **Gardens And art Gardening**	**Electronic references, websites**

Course Name .1	
principles science the soil	
Course Code .2	
SOSC109	
Semester / year .3	
The first stage, the first semester	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
number hours Study (75) number Units (3.5) .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
Prof. Dr. Abbas Ali Hussein abas.hussian@uokerbala.edu.iq	
Goals The decision	
To teach students the basic principles of the various soil and water sciences. It is a basic subject for qualifying students in agricultural colleges in general and students in soil science departments in particular to know and understand this science through studying the origin and ,composition of soil and its physical chemical, biological and fertility characteristics . Soil classification and .soil management	Goals Subject Scholarship
Strategies education And learning .9	
identification And concepts General For soil And - characteristics Physics For soil	The strategy
structure The decision .10	

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Paper exam	Lectures	Collecting and transporting soil . samples	Definition and- general concepts of soil		1
Paper exam	Lectures	Preparing the soil for chemical analyses	Soil sciences		2

Paper exam	**Lectures**	Preparing the soil for physical . analyses	Origin and development of . soil		**3**
Paper exam	**Lectures**	Estimating the moisture content . in the soil	Physical . properties of soil		**4**
Paper exam	**Lectures**	Estimating some physical :properties of soil bulk density	. Soil water		**5**
Paper exam	**Lectures**	,true density	Colloids and soil chemical . properties		**6**
Paper exam	**Lectures**	Semester exam	Soil salinity and . alkalinity		**7**
		,Porosity volumetric analysis of soil . particles	Semester exam		**8**
Paper exam	**Lectures**	Prepare the saturated paste for the soil	Reclamation of lands affected by salts and management of . reclaimed soils		**9**
Paper exam	**Lectures**	Measurement of EC andpH	and-Biological biochemical . properties of soil		**10**
Paper exam	**Lectures**	Determination- of dissolved ions in the soil solution .	. Soil fertility		**11**
Paper exam	**Lectures**	Estimation of- organic matter in . the soil	. Plant nutrition-		**12**
Paper exam	**Lectures**	the- Estimating carbon content of . soil	Soil classification and management . in Iraq		**13**

evaluation The decision .11				
Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
%30	%20	%5	%20	%25

Sources Learning And teaching .12
) Books decided Required (methodology that Found

Introduction to the basics of soil science - 2013 - Dr. Nour Al-Din Shawqi Ali - under preparation	the reviewer Home (Sources)
	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
	Electronic references, websites

English2 Course Name .1
Course Code .2
Semester / year .3
chapter , the first stage
date Preparation this the description .4
2024/4/4
shapes the audience In-person lectures available .5
My presence
(1) number hours Study (2) number Units .6
name responsible The decision Academic (if more from name Mentionsed) And email
M.D. Haider Abdel Hassan Al-Darab haider.abid@uokerbala.edu.iq
Goals The decision

Language and grammar	Goals Subject Scholarship

Strategies education And learning .9	
Reading, writing, speaking	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily and monthly exams	Lectures , discussions scientific , reports and films	Parts of plants	Parts of plants	2	1
Daily and monthly exams	Lectures , discussions scientific , reports and films	Reading and Language	Reading and Language	2	2
Daily and monthly exams	Lectures , discussions scientific ,	Grammar	Grammar	2	3

	reports and films				
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Life cycle of plant	Life cycle of plant	**2**	**4**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Reading	Reading	**2**	**5**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Language and grammar	Language and grammar	**2**	**6**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Composition of soil	Composition of soil	**2**	**7**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Reading	Reading	**2**	**8**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Language and grammar	Language and grammar	**2**	**9**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Manures and fertilizers	Manures and fertilizers	**2**	**10**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Reading	Reading	**2**	**11**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Language and grammar	Language and grammar	**2**	**12**
Daily and monthly exams	**Lectures , discussions scientific ,**	Control of plant disease	Control of plant disease	**2**	**13**

	reports and films				
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Language	Language	**2**	**14**
Daily and monthly exams	**Lectures , discussions scientific , reports and films**	Animal world	Animal world	**2**	**15**
		Parts of plants	Parts of plants	**2**	

	evaluation The decision .11
	Sources Learning And teaching .12
	Books decided Required ((methodology that Found
English language	**the reviewer Home (Sources)**
Head way	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
	Electronic references, websites

Course Name .1	
Principles of agricultural extension	
Course Code .2	
POSE102	
Semester / year .3	
Chapter one, first stage	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
(2) number hours Study (30) number Units .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
Aliwi slave the satisfaction Mohammed on Elawi.abdalridha@uokerbala.edu.iq	
Goals The decision	
Foundations of applying economic theory in the agricultural sector	Goals Subject Scholarship
Strategies education And learning .9	
identification Students Importantly science Economy Agricultural And his role in Activity Agricultural And how Application	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Paper exam	Lectures	principles Guidance agricultural	About Historical1. .	2	1
Paper exam	Lectures	principles Guidance agricultural	Definition With 2. guidance . Agricultural	2	2
Paper exam	Lectures	principles Guidance agricultural	Importance 3. Guidance . Agricultural	2	3
Paper exam	Lectures	principles Guidance agricultural	Principles 4. Guidance Agricultural : importance Existence principles for work The guideline .	2	4

			male principles And importance . all Of which		
Paper exam	**Lectures**	principles Guidance agricultural	Goals Guidance - Agricultural : levels Objectives . features . Objectives	2	**5**
Paper exam	**Lectures**	principles Guidance agricultural	6- Communication : Definition By process B - Elements the operation . C - Factors Influential in effectiveness . Connection	2	**6**
Paper exam	**Lectures**	principles Guidance agricultural	Leadership 7- Rural : definition By driving . B - Classification Leadership Rural C - Importance . all Type from . Leadership	2	**7**
		principles Guidance agricultural	Adopt And 8- spread Agricultural innovations (technologies) : definition adoptive And the spread . B - Stages practical Adoption C - Factors . Influential in Adoption . D - Classification Categories . Adopted people	2	**8**
Paper exam	**Lectures**	principles Guidance agricultural	Planning 9- Programs Guidance : definition By planning And its importance And its principles . B - Stages practical Planning For the program The . guideline	2	**9**
Paper exam	**Lectures**	principles Guidance agricultural	-Methods Guidance Agricultural And	2	**10**

			the means Indicative : Classification Methods And advantages And determinants Use all Type . B - Considerations the duty Observe it in a test The method . C - Means educational, Classification And considerations the duty Observe it in . Use it		
Paper exam	**Lectures**	principles Guidance agricultural	Calendar 11- Programs Guidance : definition With a calendar the program . B - Elements practical Calendar .	2	**11**
Paper exam	**Lectures**	principles Guidance agricultural	Stages 12. practical Calendar .	2	**12**
Paper exam	**Lectures**	principles Guidance agricultural	Fields 13.- calendar the program The . guideline	2	**13**
Paper exam	**Lectures**	principles Guidance agricultural	Guidance 14. Agricultural in Iraq And stages Its . development	2	**14**
Paper exam	**Lectures**	principles Guidance agricultural	Review 15. General	2	**15**

evaluation The decision .11					
	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%50				%50
Sources Learning And teaching .12					

	Books decided Required ((methodology that Found
the theory Economic Partial	**the reviewer Home (Sources)**
Business Management Mez Parish	**Books And references Prevailing that recommend With it (Journals (.... Reports ,scientific**
administration Farmer between the theory And the application	**Electronic references, websites**

:code	Article: Combat machines and equipment	The second phase	Mandatory (essential)
Number of units: 3.5	Practical hours: 3	Theoretical hours: 2	Planned teaching hours
About agricultural tractors - and the functions of agricultural tractors			Description of the curriculum
Introducing the students of the Plant Protection Department to agricultural machines and machinery, including the puller engine, its parts, the principle of its operation, and identifying the various .agricultural machines involved in plant protection service			The goal of teaching the curriculum
The student should be able to know the functions of agricultural tractors			Learning Outcomes
Field crop mechanization equipment / written by Lotfi Hussein and Abdel Salam Mahmoud			Methodical book

Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests	Semester grades
%30	%20	%5	%20	%25	

Threads

Number Hours	Article The process	Number Hours	Article Theory	The week
3	1- General laboratory instructions and identification of laboratory devices and equipment.	2	1- Introduction to microbiology. A historical overview of the development of microbiology, the ,theory of abiogenesis +B40+B45:B46+B45:B47+B4+B45	1

			:B46	
3	2- Cultivation media and how to prepare and sterilize them.	2	2- The location of microorganisms among living organisms. Microbiological characteristics – culture characteristics , phenotypic appearance. Metabolic properties chemical properties, genetic - properties, divisional status of microorganisms.	2
3	3- Isolating and purifying microorganisms - Isolation methods: Isolation: from soil, water, air, from infected plant parts.	2	3- The structure of bacteria and the functions of their parts. External structures - flagella, cilia, cell wall, internal structures - plasma membrane, ribosomes , genetic material.	3
3	4- Purifying bacteria and studying the characteristics of bacterial colonies shape, color, effect on the culture) (medium	2	4- Nutrition of microorganisms. Bacterial nutrition - bacterial culture media , growth factors, inorganic nutrients, transport of nutrients across the plasma membrane.	4
3	5- Study the pathogenicity of microorganisms isolated from infected plants. Bacteria – on potato slices, tobacco plants. Mushrooms - on plant families. Virus - on plant hosts.	2	5- Growth and reproduction of bacteria. Isolation of bacteria in pure culture, preservation of bacterial cultures, cell cycle, growth phases, estimation of bacterial growth, continuous bacterial culture.	5
3	6- Bacterial staining – simple staining, gram stain. -Study the shape of bacteria (spherical, rod-like)	2	6- Mycoplasma , Phytoplasma , Rickettsia.	6
3	7- Bacterial counting: directly with an optical microscope or on the culture medium using the dilution method . Examining the movement of bacteria using a hanging drop.	2	7- The first monthly exam.	7
3	8- Yeasts and molds : knowledge of morphological characteristics, examination of mycelium and spores microscopically.	2	8- Bacterial enzymes. Endogenous enzymes, exogenous enzymes, physical and chemical properties of enzymes, specialization, naming of enzymes, nature of enzymatic reactions, mechanism of enzyme action, enzyme inhibition, bacterial metabolism, energy production, and energy use.	8
3	9- Examination of microorganisms in milk and other processed foods.	2	9- Inheritance of microorganisms . ,Nucleic acid synthesisDNA replication, RNA cloning, protein synthesis, variation in bacteria,	9

			genetic mutations, genetic exchange (conjugation), genetic transformation, gene transfer.	
3	10- The effect of some physical factors on the growth of microorganisms.	2	10- Viruses... their discovery, physical properties , and chemical composition. Division of viruses, bacterial viruses, animal viruses, plant viruses, the importance of viruses, viroids.	10
3	10- The effect of some chemical pesticides and antibiotics on the growth of microorganisms.	2	11- Fungi. External appearance, parasitism, fungal cell structure, mutations in the vegetative structure of the fungus, reproduction, division of the fungus. Algae: external appearance, reproduction, economic importance of Botozoa algae : existence, reproduction, division.	11
3	12- Examination of samples of heavy water - testing for the presence of viruses and bacteria.	2	12- Soil microorganisms. Soil ,environment: temperaturepH , light, organic matter (types, composition), factors affecting its spread in the soil. Microorganisms in food—sources of food contamination, control of sources of contamination, microorganisms ,in milk and milk products Microorganisms in vegetables and fruits. Microbial spoilage of food, microbiology and food processing, food poisoning.	12
3	13. - Biotechnology: industrial fermentations, microbial enzymes, metabolic microbial products, life transformations, genetic engineering and its applications.	2	13- Microorganisms in water. Factors affecting the spread of microorganisms in water, sources of water pollution (floods, sewage, agricultural chemicals), the relationship between microorganisms and humans, microorganisms naturally present in the human body (their benefits and harms).	13
3	14- The relationship between microorganisms and plants	2	14- Control of microorganisms. Immunity - antigens, antibodies (types, composition), immune response, immune cells, interaction of antibodies and antigens, immunological tests, antibiotics, antibiotic-producing organisms.	14
3	Review and exam	2	15- The second monthly exam. Benefits of plant microorganisms,	15

			microorganisms that cause plant diseases (bacteria, fungi, viruses, snakeworms).	

.1 Course Name
Freedom and democracy
.2 Course Code
.3 Semester / year
The second stage, the second semester
.4 date Preparation this the description
2024/4/4
.5 shapes the audience Available
My presence
.6 (2) number hours Study (2) number Units
name responsible The decision Academic (if more from name Mentionsed) And email
kudir.yassen@uokerbala.edu.iq Khadir Yasin Khadir
Goals The decision

Introducing students to the culture of freedom and how to distinguish between freedom and chaos	Goals Subject Scholarship

.9 Strategies education And learning	
A study of the most important civil liberties	The strategy

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1		Definition of freedom	Definition of freedom	Lectures	Paper exam
2		Meanings of . freedom	Meanings of . freedom	Lectures	Paper exam
3		Distinguish between freedom . and anarchy	Distinguish between freedom . and anarchy	Lectures	Paper exam
4		A study of the most important . civil liberties	A study of the most important . civil liberties	Lectures	Paper exam
5		A study of the most important political freedoms .	A study of the most important political freedoms .	Lectures	Paper exam
6		Semester exam	Semester exam	Lectures	Paper exam

Paper exam	**Lectures**	What is meant by ? democracy	What is meant by ? democracy		**7**
Paper exam	**Lectures**	Forms of . democracy	Forms of . democracy		**8**
Paper exam	**Lectures**	Democratic state . standards	Democratic state . standards		**9**
Paper exam	**Lectures**	Democratic . Constitution	Democratic . Constitution		**10**
Paper exam	**Lectures**	The state and its . forms	The state and its . forms		**11**
Paper exam	**Lectures**	Semester exam	Semester exam		**12**
Paper exam	**Lectures**	Democratic elections (concept (.(conditions -	Democratic elections concept -) (.(conditions		**13**
Paper exam	**Lectures**	Democratic elections requirements -) (objectives	Democratic elections (requirements - (objectives		**14**
Paper exam	**Lectures**	General review	General review		**15**
Paper exam	**Lectures**				

evaluation The decision .11				
Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
%50	-	-	-	%50

Sources Learning And teaching .12	
Concept Freedom And democracy	**Books decided Required ((methodology that Found**
text the Constitution The Iraqi the permanent on This is amazing Freedom	**the reviewer Home (Sources)**
Democracy And rights Human	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
	Electronic references, websites

Course Name .1	
Structure and classification of insects	
Course Code .2	
INTA215	
Semester / year .3	
The second stage, the second semester	
date Preparation this the description .4	
2024/4/4	
shapes the audience Available .5	
My presence	
(3.5) number hours Study (75) number Units .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
A.M.D. on slave ELHussein generous **ali.kareem@uokerbala.edu.iq**	
Goals The decision	
Goals Subject Scholarship	**Introducing students to the science of insect classification, its relationship with other sciences, and its importance in plant protection**
Strategies education And learning .9	
The strategy	**The student should be able to classify and diagnose insects**

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Exam Paper	Lectures	to divide Insects The Classification of Insect.	Taxonomy, its definition Its history and relationship to other sciences and the stages of . its development	5	1
Exam Paper	Lectures	Rank Self Guilt hopper order Collembola - Self Guilt Poetic order Thysanura –	Modern taxonomy and its comparison with ancient taxonomy,	5	2

		Leather wings Dermaptera – order mare the Prophet order Mantodea - a fly May Ephemeroptera - Blattodea .Mardan	taxonomic ranks, and the formation of life types with . examples		
Exam Paper	Lectures	Rank Straight wings Jumping Orthoptera – order Tremors Odonata .	Division of insects, taxonomic stratification. The class system with . examples	**5**	**3**
Exam Paper	Lectures	Rank equal Isoptera – wings order Ciliary wings Thysanoptera .	Introduction to the origin of the arthropod phylum a historical) overview), theories of formation and evolution, a table of the geological history of the . Earth	**5**	**4**
Exam Paper	Lectures	Exam	Stages of insect emergence, kinship links between arthropods, divisional table of . insects	**5**	**5**
Exam Paper	Lectures	Rank Half wings Hemiptera .	. Exam	**5**	**6**
Exam Paper	Lectures	Rank Bi wings Diptera .	Describe insects, its division and sub-orders, with . examples	**5**	**7**
Exam Paper	Lectures	Rank Retina Neuroptera wings –	Types of museum collections, styles (types of models) with . examples	**5**	**8**
Exam Paper	Lectures	Rank membranous Hymenoptera . wings	Individual plants, their types, and the reason for their appearance, . with examples	**5**	**9**
Exam Paper	Lectures	Rank Squamous Lepidoptera . wings	Scientific nomenclature, its conditions, writing the scientific name	**5**	**10**

Exam Paper	Lectures	Rank coleoptile Coleoptera .wings	Taxonomic keys, with . examples	**5**	**11**
Exam Paper	Lectures	Rank Lice Phthriaptera –	Diagnosis of patterns and taxonomic differentiation . with examples	**5**	**12**
Exam Paper	Lectures	Rank Hidden wings Siphonaptera .	Taxonomic characteristics and geographical distribution of living organisms according to geographical regions, with . examples	**5**	**13**
Exam Paper	Lectures	review General	General Review	**5**	**14**
Exam Paper	Lectures	Exam	Exam	**5**	**15**

evaluation The decision .11					
	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%30	%20	%5	%20	%25

Sources Learning And teaching .12	
installation And classification Insects	**Books decided Required ((methodology that Found**
installation And classification Insects : George Victory God	**the reviewer Home (Sources)**
Insects Secrets	**Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific**
	Electronic references, websites

1. Course name: Medical and veterinary insects
2. Course Code
3. Semester / year
Second semester 2023-2024
4. date Preparation this the description
12/1/2023
5. shapes the audience Available
My presence
6- number hours Academic (total) number Units (total)
5 Hours, 3.5 units
name responsible The decision Academic (if more from name Mention and email (
Name: Prof. Sinai Muslim Al-Zarfi Email :sienaa.m@uokerbala.edu.iq
:Goals Decision

:Goals Subject Scholarship	Introducing the student to medical and veterinary entomology, who is directly interested in studying the life of insects And arthropods have a medical and veterinary relationship, in addition to the damage they cause and how to resist them. The student must be familiar with a lot of . biological sciences Related to medical entomology entomology general such as , and zoology and parasitologyZoology Animal and Parasitology and scienceEcology Ecology and , Physiology , pathology Epidemiology epidemiology and animal wasteHistology Copralogy Toxicology and to be fully familiar with biological assessment methods And dealing with machines and devices used in the field of .insects

9. Strategies education And learning

The strategy	1. Focus on the most important medical and veterinary insects : Real-life examples: Use real-life examples and case studies in The medical and veterinary field to clarify the effects . 2- Field visits: Organizing field visits for animal fields Veterinary clinics and public health departments in the Ministry of Health to introduce students to practical applications. Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning: Group Discussions: Encourage students to discuss and solve problems together. 4. Continuous evaluation: Assignments and Quizzes: Assess students' understanding of medical and veterinary entomology through assignments and quizzes. 5. Linking medical and veterinary entomology to other courses

10. The decision structure

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	Understanding medical and veterinary entomology	introduction In medical and veterinary entomology	Lectures	Daily paper exam
2	5	Understand the importance of medical and veterinary entomology	What is the importance of medical and veterinary entomology?	Lectures	Daily paper exam
3	5	How to identify the types of medical and veterinary insects	How are medical and veterinary insects studied?	Lectures	Practical tests
4	5	Distinguishing between the types of insects that infect humans (medical) and the types of	What is the difference between medical and veterinary entomology?	Lectures	practical test

			insects that infect animals (veterinary)		
practical test	Lectures	The effect of insects on human and animal health	Providing students with the most important pathogens caused by insects by identifying them .practically	5	5
practical test	Lectures	First test	First test	5	6
practical test	Lectures Video	How are medical and veterinary insects ?identified	Introducing students to the most important distinctive signs for diagnosing medical and veterinary .insects	5	7
practical test	Lectures Video	What are the types of medical and veterinary ?insects	Providing students with laboratory types of medical and veterinary insects for the purpose of identifying the .species	5	8
practical test	Lectures Video	How are medical and veterinary insects ?controlled	The ability to control medical and veterinary insects	5	9
practical test	Practical views	Methods of transmission of pathogens	Introducing students to the methods of transmitting pathogens	5	10
practical test	Practical views	How is medical and veterinary control of insects carried ?out	Understand the most important methods of medical and veterinary	5	11

			control of ?insects		
practical test		Second test	Second test	5	12
practical test	Practical views	What human and animal diseases are not transmitted by medical and veterinary ?insects	Distinguishes human and animal diseases that are not transmitted by medical and veterinary insects	5	13
practical test		Third test	Third test	5	14
practical test	Lectures	General Review	General Review	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And teaching .12	
Books decided Required ((methodology that Found	Medical and veterinary - 1 insects / Knowledge Facility in Alexandria / Prof. Dr. Mustafa Saliman Saleh /2004 Translated by Dr. Ali Muhammad Saleh , 1984
the reviewer Home (Sources)	A guide to the MOServer /-2 world of medical insects .University of Al Mosul
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	Insects that transmit - 3 diseases / The Kuwaiti Knowledge World / Prof. Dr. Abu Al- Hab / 1982
Electronic references, websites	Medical and veterinary pests Abdel Aleem Saad Suleiman Desouki abdelalem2011@yahoo.com Department of Plant Protection (Agricultural Zoology) faculty of Agriculture

Sohag University	

1. Course Name
Plant nutrition
2. Course Code
PLNU2
3. Semester / year
Second semester/2023-2024
4. date Preparation this the description
5. shapes the audience Available
My presence
6. number hours Academic (total) number Units (total)
5 hours, 3.5 units
name responsible The decision Academic (if more from name (Mentionsed
: Name : Prof. Kazem Muhammad Abdullah Email kadum.m@uokerbala.edu.iq

Goals The decision	
Goals Subject Scholarship	• Learn about plant nutrition. • Identify nutrients and their divisions. • Learn about the importance of plant nutrients. • Methods of transporting nutrients to plants. • Increasing the student's ability to identify soil fertility through soil and plant analysis

9. Strategies education And learning	
The strategy	1. Adopting the lecture method and linking each topic with real-world examples. 2. Teaching the student the basic concepts of the subject and topics related to knowledge and understanding of the subject. 3. Theoretical lessons in addition to practical lessons, observations, exercises, laboratory and field experiments, and writing reports. 4. Writing reports on topics related to the subject using the Internet and other sources

5 . Active learning: Group Discussions: Encourage students to ask some factual questions about the topic.	

10. The decision structure

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily paper exam + report writing	lectures + laboratory experiments	Introduction to plant nutrition, its importance, division of nutrients, and factors affecting absorption	Understanding plant nutrition and its relationship to soil fertility and fertilization	5	1
Exam daily Paper + writing a report	Lectures	Development Historical For your information feed the plant And study cell Vegetarianism	Study the history of plant nutrition and its relationship to the plant cell	5	2
Exam daily Paper + writing a report	Lectures	Types of solutions, their properties, and method of preparation	Increase student knowledge about how to prepare nutrient solutions	5	3
Exam daily Paper + writing a report	Lectures + laboratory	content the plant from Elements Food	Students' understanding of the proportions of elements in plants	5	4
Exam daily Paper + writing a report	Lectures	absorption Elements Food And theories Related With it	Students' knowledge of the mechanisms and hypotheses	5	5

			that explain the entry of element ions into plants		
Exam daily Paper + writing a report	Lectures	absorption Elements Food And theories Related With it	Students' knowledge of the mechanisms and hypotheses that explain the entry of element ions into plants	5	6
		Monthly exam	Monthly exam	5	7
Exam daily Paper + writing a report	Lectures + laboratory observations	Bioactivities of nutrients, symptoms of deficiency, toxicity, and treatment methods	The student's knowledge of the role of each element in the plant, the symptoms of its deficiency and its treatment, as well as toxicity	5	8
Exam daily Paper + writing a report	Lectures + laboratory observations	Bioactivities of nutrients, symptoms of deficiency, toxicity, and treatment methods	The student's knowledge of the role of each element in the plant, the symptoms of its deficiency and its treatment, as well as toxicity	5	9
Exam daily Paper + writing a report	Lectures + laboratory observations	Bioactivities of nutrients, symptoms of deficiency, toxicity, and treatment methods	The student's knowledge of the role of each element in the plant, the symptoms of its deficiency and its treatment, as well as toxicity	5	10

Exam daily Paper + writing a report	Lectures	relationship the plant With water And a role This is amazing Relationship With nutrition the plant	The ability to understand the relationship of water to the absorption of nutrients	5	11
Exam daily Paper + writing a report	Lectures	feed the plant And quantity The result relationship) the plant In (sum	Explaining the role it plays in increasing the quantitative and qualitative outcome	5	12
Exam daily Paper + writing a report	Lectures + views Laboratory	Salinity the soil And nutrition the feed ,plant the plant Genetics, nutrition the plant And diseases the plant	Explaining the relationship between soil and water salinity, readiness and absorption of elements clarification impact Expression Genetic For plant on Its content from Elements Food And a role this Content in resistance Diseases Vegetarianism different	5	13
Exam daily Paper + writing a report	Lectures + views Laboratory	nutrition Paper (its importance And its flaws A state her job And the factors Influential on . (her	Explaining to students the importance of foliar nutrition for plants, why it is used instead of ground fertilization, what are its disadvantages the , mechanism	5	14

			of the element's penetration into leaf tissue, and the factors affecting it.		
		Monthly exam		5	15

11. evaluation The decision	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Sources Learning And teaching	
Books decided required (methodology that Found)	Applied plant nutrition/ Fadel Hussein Al-Sahhaf. 1989 Principles of plant nutrition. Translated by Saadallah Najm Abdullah Al-Nuaimi. University of Al Mosul. 1984
the reviewer The main one (Sources (	Theoretical and practical plant nutrition (Muzaffar Ahmed .(2019) .Daoud Al-Mousili et al
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	Barker, A. V., & Pilbeam , D. J. (Eds.). (2015). Handbook of plant nutrition. .CRC press
references , websites	

.1 Course Name
Phosphorus is a plant
.2 Course Code
.3 Semester / year
The second stage/second semester
.4 date Preparation this the description
2024/4/4
.5 shapes the audience Available
My presence
.6 (3.5) number hours Study (5) number Units
name responsible The decision Academic (if more from name Mentionsed) And email
Mr. Dr. Susan Mohammed Khadir suzan.mohammed@uokerbala.edu.iq
Goals The decision

Goals Subject Scholarship	Introducing students to the plant cell and the physiology of metabolic processes within plants

.9 Strategies education And learning

The strategy	that He is requester able on knowledge cell Vegetarianism And its installation And its functions And its parts .

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	introduction in science Faslja the plant with a look Historical	Plant cell - structure .	Lectures	Paper exam
2	5	The cell 2- Botanical : its composition And jobs Its parts .	Solutions: 2- Preparing solutions mathematically and practically .	Lectures	Paper exam
3	5	Characteristics 3- Physics Bio : solutions And acidity And solutions the	Measurement 3- solution: Preparing the measuring solution and making dilutions	Lectures	Paper exam

		for different . solutions	organization And . energy Free		
Paper exam	**Lectures**	Buffer pH and4- Solution: Preparing it and pH measuring the different of . solutions	Systems 4- Colloidal : its types And its . characteristics	**5**	**4**
Paper exam	**Lectures**	Colloids: 5- Preparation of hydrophilic and hydrophobic . colloids	Spread And 5- . osmosis	**5**	**5**
Paper exam	**Lectures**	Precipitation of 6- hydrophilic and hydrophobic . colloids	Effort Watery 6- And accounts . Related with it	**5**	**6**
Paper exam	**Lectures**	Diffusion : 7- Carrying out experiments on diffusion and the factors affecting it .	Supplement 7- Accounts Effort Watery And osmosis And movement water between cells And drinking And he pressed . Imbibing	**5**	**7**
Paper exam	**Lectures**	Osmosis: 8- Conducting experiments related to . osmosis	. Permeability8-	**5**	**8**
Paper exam	**Lectures**	Permeability: 9- experiments on . permeability	Absorption 9- . water	**5**	**9**
Paper exam	**Lectures**	10- Estimation of osmotic the potential of plant . tissue	Juicer Rising10-). sap Rising)	**5**	**10**
Paper exam	**Lectures**	Estimation of 11- . water potential	Transpiration 11- And dissection the device The . gap	**5**	**11**
Paper exam	**Lectures**	Imbibition: 12- Experiments related to . imbibition	Juicer 12- Phloem (sap). descending	**5**	**12**
Paper exam	**Lectures**	Supplement 13- the results of imbibition experiments and change the . results	Acting Optical13- .	**5**	**13**

Paper exam	**Lectures**	Transpiration: 14- Conducting experiments to measure transpiration and the force of . transpiration	Acting Optical14- .	**5**	**14**
Paper exam	**Lectures**	Exam15-	Acting Optical15- .	**5**	**15**

evaluation The decision .11				
Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
%30	%20	%5	%20	%25

Sources Learning And teaching .12	
Books decided Required ((methodology that Found	**Mohammed, slave The Great Kazem And a supporter Ahmed Yunus (1991) Basics Physiology the plant C 1 , 2 and 3**
the reviewer Home (Sources)	**Physiology Plant - Library road Knowledge**
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	**Physiology the plant Difficulty**
Electronic references, websites	**Faslja growth And develop the plant**

.1 Course name: Plant classification	
.2 Course Code	
BOTA201	
.3 Semester / year	
The second stage, the first semester	
.4 date Preparation this the description	
2024/4/4	
.5 shapes the audience Available	
My presence	
.6 (3.5) number hours Study (75) number Units	
name responsible The decision Academic (if more from name Mentionsed) And email	
Brier Ahmed supporter buraer.a@uokerbala.edu.iq	
Goals The decision	
Goals Subject Scholarship	identification Students Importantly science classification the plant And his relationship With science The other
.9 Strategies education And learning	
The strategy	Methods diagnosis, date naming, Patterns Tab the old And the hadith, Patterns

.10 structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1		science Category And its importance	study Appearances External For the paper Included , ranking Papers , parts the paper	Lectures	Exam Paper
2		His relationship With science The other And fields	sequel study Appearances External For the paper , appearance The blade , edge The blade , summit And rules	Lectures	Exam Paper

Exam Paper	Lectures	study installation Flower Included parts Flower And types Flowers . Symmetry in Flowers	Methods diagnosis, date naming, Patterns Tab the old And the hadith, Patterns		**3**
Exam Paper	Lectures	study The stigma in Ovary And types oocytes And arrange them	the date Evolutionary For your information Category , adjectives Advanced And primitive in Parts		**4**
Exam Paper	Lectures	study Appearances External For inflorescences Included : inflorescences Ltd And others Limited	Methods search Classification : Classification Numerical (using the key) , Category		**5**
Exam Paper	Lectures	study installation The fruits It includes The fruits Simple And the gathered And double And the fruits	Methods study Unit Taxonomy With all difference		**6**
Exam Paper	Lectures	to explain How use key Families Vegetarianism And the chart Syphilis And the equation The vase	study Evolutionary For groups Vegetarianism And confirmation on the plants Seed (naked) Seeds		**7**
Exam Paper	Lectures	use the key To study family one from Selves Dicotyledons And family from Selves Cotyledon One	Families The vase that to bear characteristics Primitive		**8**
Exam Paper	Lectures	Methods plural And save Plants : cabbage Models drying Models stabilizing Samples	Most important Families that to bear characteristics advanced		**9**
Exam Paper	Lectures	Identify on Herbariums Vegetarianism Iraqi / Roads save Models	the plants Environmental Iraqi from where Explore it And its		**10**

		Vegetarianism Iraqi	patterns Taxonomy		
Exam Paper	Lectures	training Students on Diagnosis Types Vegetarianism on road Grassland And references And encyclopedias	study Species Embroidery Environmental And chemical And genetic		**11**
Exam Paper	Lectures	study Families from Selves Dicotyledons on road the key	Importance Excavations Vegetarianism in Studies Evolutionary		**12**
Exam Paper	Lectures	study Families from Selves Cotyledon One	study Developments Genetic And its importance in science Category		**13**
Exam Paper	Lectures	get up requester By collecting not less than on Thirty model Return to Thirty family Vegetarianism Different	study Taxonomic For the most important Families Vegetarianism Self Importance agricultural in Iraq		**14**
Exam Paper	Lectures	study Appearances External For the paper Included , ranking Papers , parts the paper	the reviewer And its importance in science Category Especially Available Of which in Iraq		**15**

evaluation The decision .11					
	Final theoretical exam	**Final practical test**	**Daily theoretical tests**	**Practical quarterly tests**	**Theoretical semester tests**
	%30	%20	%5	%20	%25
Sources Learning And teaching .12					
Books decided Required ((methodology that Found					
the reviewer Home (Sources)					
Classification the plant And division Bio					
book science classification the plant					

Plant taxonomy	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
	Electronic references, websites

Course Name .1
Principles of field crops
Course Code .2
FCPT213
Semester / year .3
The second stage, the first semester
date Preparation this the description .4
2024/4/4
shapes the audience Available .5
My presence
(3.5) number hours Study (75) number Units .6
name responsible The decision Academic (if more from name Mentionsed) And email
aggressive Hamed Taha Oday.h@uokerbala.edu.iq
Goals The decision

	Goals Subject Scholarship
Strategies education And learning .9	
	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	date agriculture Crops And its habitats Original	5	1
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Crops field Its importance And divide it And name it And he taught	5	2
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Crops And a branch	5	3
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	growth plants Crops Field 1	5	4
Exams Daily And monthly	lecture Synchronicity	Crops field	Factors the environment	5	5

activities + And duties	lecture + Video		And her relationship With growth Crops field		
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Factors the environment And her relationship With growth Crops field	5	**6**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Installation Biological (biological) . nitrogen	5	**7**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Lands Affected With salts	5	**8**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Operations to equip the earth	5	**9**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Roads the public To cultivate	5	**10**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Operations service The crop after Agriculture patching and) thinning) . And (the hoeing	5	**11**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	irrigation Crops field And exchange Agricultural	5	**12**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	fertilization . Crops The field	5	**13**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Weeds And its damage And resist it	5	**14**
Exams Daily And monthly activities + And duties	lecture Synchronicity lecture + Video	Crops field	Operations harvest And the lesson And storage For crops field	5	**15**

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And teaching .12	
Books decided Required ((methodology that Found	basics Crops field
the reviewer Home (Sources)	book basics production Crops field
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	
Electronic references, websites	

1. Course Name	
Principles of microbiology	
2. Course Code	
3. Semester / year	
First semester 2023-2024	
4. date Preparation this the description	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
5 hours and 3.5 units	
name responsible The decision Academic (if more from name Mentionsed) And email	
A.M.D. Mohsin Abdul Ali Mohsin muhsin.muhsin@uokerbala.edu.iq millimeter. Zahraa Jawad Kazem	
Goals The decision	
Goals Subject Scholarship	Identify the main groups of microorganisms and their role in nature
9. Strategies education And learning	
The strategy	Teaching students the behavior of microorganisms, their negative and positive roles, their effects on the environment, and methods of isolation, growth, and detection. The course presents the main groups of microorganisms, their description, distribution, and classification. Their physiology , economic importance, and their relationship with each other and with other living organisms

10. structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	Definition of microbiology, the history of its development, theories that explain the origin of life, and some scientists and their roles	Introduction to microbiology	Lectures	Daily exam

Daily exam	Lectures	Microbiology groups	The main collections of biology , microscopy, and the sciences specialized in their study and some scientific terms	5	2
Daily exam	Lectures	Bacteria	Bacteria, their spread, distribution and forms	5	3
Daily exam	Lectures	Cell wall, flagella, cilia, spores, and capsules	Non-living components of the bacterial cell and their structure	5	4
Daily exam	Lectures	Cytoplasm and its contents	The living components of the bacterial cell and their growth methods	5	5
Daily exam	Lectures	Diffusion of substances and their passage through the cytoplasmic membrane	Mechanism of transport of substances across cytoplasmic membranes Methods of counting bacterial cells and their economic importance	5	6
		First month exam	First month exam	5	7
Daily exam	Lectures	Fungi	Fungi described by their composition	5	8
Daily exam	Lectures	Biological activities of fungi	Nutrition and physiology of fungi	5	9
Daily exam	Lectures	Major groups of fungi	Classification of fungi	5	10
Daily exam	Lectures	Taxonomic traits	Characteristics of fungi and their economic importance	5	11
Daily exam	Lectures	Algae	Description of algae:	5	12

			movement, nutrition, and reproduction Division of algae, its advantages and economic importance		
		Second month exam	Second month exam	5	13
Daily exam	Lectures	Viruses	Viruses, their types, structure, life cycle, and classification	5	14
Daily exam	Lectures	Pathogenesis	The relationship between microorganisms and humans	5	15

evaluation The decision .11	
-Practical quarterly exams 20% -Theoretical semester exams 20% Final practical - Daily theoretical tests 10% - final theoretical test 30% exam 20%	
	Sources Learning .12 And teaching
Nizam, Adnan Ahmed Ali. 2008. Microorganism Biology. Theoretical part. Damascus University. Faculty of Science. 432 pages	Books decided Required (methodology that (Found
Definition of Microbiology	the reviewer Home ((Sources
http://en.wikipedia.org/wiki/Microbiology#Branches	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Scientific researcher website	Electronic references, websites

1. Course Name
Principles of Statistics
2. Course Code
3. Semester / year
Second semester/2023-2023
4. date Preparation this the description
5. shapes the audience Available
My presence
6. number hours Academic (total) number Units (total)
5 hours, 3.5 units
name responsible The decision Academic (if more from name (Mentionsed
Name : Professor Ali Nazim Farhoud Email: ali.nazem@uokerbala.edu.iq
Goals The decision

Goals Subject Scholarship	• Students gain experience, skills, and the ability to deal with and analyze data • Dealing with various statistical methods. • Analyze agricultural data, make decisions and communicate effectively.

9. Strategies education And learning	
The strategy	1. Focus on agricultural applications: Real-life examples: Use real-life examples and case studies from the field of agriculture to illustrate statistical concepts. Field visits: Organizing field visits to farms and agricultural research centers to introduce students to practical applications of statistics. 2. Use of technology: Statistical software: Teach students how to use common statistical software, Simulation: Use simulation software to represent statistical phenomena and enhance understanding of concepts. Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning: Group Discussions: Encourage students to discuss statistical concepts and solve problems together.

.4 Continuous evaluation: Assignments and Quizzes: Assess students' understanding of statistical concepts through assignments and quizzes. .5 Linking statistics to other courses	

.10 The decision structure

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily paper exam	Lectures	Introduction and definition	Understand the basic principles of statistics	5	1
Daily paper exam	Lectures	Statistical symbols	Learn statistical symbols	5	2
solving equations	Exercises	Data display and frequency distribution	Providing students with the ability to display data and frequency distribution	5	3
solving equations	Exercises	Mediation measures	Students' understanding and assimilation of mediation scales	5	4
solving equations	Exercises	Measures of dispersion	Students' knowledge of dispersion measures and the ability to apply them	5	5
solving equations	Exercises	Compatibility and exchange	Students' understanding of the principles of compatibility and exchange	5	6
		Monthly exam	Monthly exam	5	7

solving equations	Exercises	Binomial distribution	Ability to solve applied problems of binomial distribution	5	8
solving equations	Exercises	Normal distribution	Ability to solve applied normal distribution problems	5	9
solving equations	Exercises	Hypothesis Z testing	Ability to solve applied problems and hypotheses test	5	10
solving equations	Exercises	distributiont	Ability to solve t- applied distribution problems	5	11
solving equations	Exercises	distributionF	Ability to solve F applied distribution problems	5	12
solving equations	Exercises	Chi- square distribution	Ability to solve applied chi-square distribution problems	5	13
solving equations	Exercises	General Review	General Review	5	14
		Monthly exam		5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And .12 teaching	
Books decided Required ((methodology that Found	Al-Rawi, Khashi Mahmoud. 1989. Introduction to statistics. College of Agriculture - University of Mosul.
the reviewer Home (Sources)	Hoshmand , R. (2017). *Statistical methods for environmental and agricultural sciences* . CRC press.

Rangaswamy , R. (1995). *A text book of agricultural statistics* . new age international.	Books And references Prevailing that recommend With it Reports ,Magazines scientific) (....
https://www.realityworks.com/blog/10-online-resources-for-agriculture-classrooms/?v=560e51228bc1	Electronic references, websites

Course Name .1	
Agricultural biotechnology	
Course Code .2	
Semester / year .3	
The second stage / second semester	
date Preparation this the description .4	
2024/24/4	
shapes the audience Available .5	
My presence	
number hours Academic (total) number Units (total) .6	
% 3.5 :Number of units **hour 75**	
name responsible The decision Academic (if more from name Mentionsed) And email	
aqeel.n@uokerbala.edu.uk	**Prof. Dr. Aqeel Nazzal Berber**
Goals The decision	
Introducing students to the principles and methods of biotechnology and transferring their applications to various agricultural sciences, including methods for developing plant varieties that are resistant to diseases .and insects that attack agricultural crops	**Goals Subject Scholarship**
Strategies education And learning .9	
Biotechnology aims to enhance the understanding and application of the scientific and technical foundations in the field : of agricultural biotechnology . This can be achieved by 1. Providing comprehensive educational curricula: designing educational curricula that include theoretical and practical aspects to enhance students' understanding of the basic concepts and . applications of agricultural biotechnology 2. Adopting interactive methods: Encouraging discussion and interaction between students and teachers to enhance the . exchange of knowledge and its application to practical contexts 3. Providing practical application opportunities: Organizing practical activities such as laboratories and research projects that enable students to experience and apply agricultural . biotechnology in reality	**The strategy**

structure The decision .10	

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Practical daily tests Tests are quarterly	theoretical practical	Agricultural biotechnology	to The understand nature of biotechnology, the history of biotechnology, and the five historical stages that science has passed through	5	1
Practical daily tests Tests are quarterly	theoretical practical	The importance of biotechnology	to Th understand e importance of biotechnology and its relationship to the fields of life . science	5	2
Practical daily tests Tests are quarterly	theoretical practical	Biocell	Plant cells and their types, the importance of plants for biotechnology, somatic cell ,N) cultures (2 germ cell ,(N) cultures protoplast cultures	5	3
Practical daily tests Tests are quarterly	theoretical practical	Tissue culture	Tissue culture, benefits of tissue culture, components of the environment used in tissue culture, conditions for successful tissue culture, advantages of . this method	5	4
Practical daily tests	theoretical practical	Microorganisms and their role in biotechnology	Animal cells and their importance in biotechnology, the importance	5	5

Tests are quarterly			of biological pesticides Bioinsecticides (Cancer cells ,Hela cells) microorganisms and their role in biotechnology		
Practical daily tests Tests are quarterly	**theoretical practical**	**Genetic mutation**	Genetic mutations, types of genetic mutations, the origin and historical development of genetic . engineering	**5**	**6**
Practical daily tests Tests are quarterly	**theoretical practical**	**Genetic Engineering**	Genetic engineering, a historical view , gene color, genetic material, structure of nucleic acids, rules involved in the structure ,DNA of bonds found in the DNA molecule.	**5**	**7**
Practical daily tests Tests are quarterly	**theoretical practical**	**Replication**	a base In Charaguff the sequence of nitrogenous bases, a double helix Doublehelix , DNA , replication conserativ semi , the replication mechanism of DNA . replication	**5**	**8**
Practical daily tests Tests are quarterly	**theoretical practical**	**Cloning**	The mechanism of DNA replication outside the body of an organism Invitro Repetition within the body	**5**	**9**

			of an organism ,inviro Synthesis of DNA strands inside living cells, Okazaki pieces Okazakai Fregment		
Practical daily tests Tests are quarterly	**theoretical practical**	**Anatomy of a gene**	Anatomy of genes, structural genes	**5**	**10**
Practical daily tests Tests are quarterly	**theoretical practical**	**Gene structure**	Gene organization and structure in eukaryotes, in Promoters prokaryotes, Catalysts in eukaryotes	**5**	**11**
Practical daily tests Tests are quarterly	**theoretical practical**	**Translation**	Showing gene expression showing the) trait), protein synthesis, RNA the , formation three types of ,RNA m-RNA r-RNA ,t-RNA protein , synthesis in the cytoplasm via . ribosomes	**5**	**12**
Practical daily tests Tests are quarterly	**theoretical practical**	**Vectors**	Biology Eng . Genetic Vectors and types, their plasmids , bacterial phage vectors , viruses, Ti. coronavirus	**5**	**13**
Practical daily tests Tests are quarterly	**theoretical practical**	**Genetic cloning**	Dealing with the eukaryotic nucleus and how to carry out the process of genetic cloning, creating transgenic	**5**	**14**

			animals and , plants delivering synthesized to cells, DNA transformation and transfection.		
Practical daily tests Tests are quarterly	**theoretical practical**	**Genetically modified plants**	Transgenic plants, plants that have been genetically modified in the field of plant protection, are resistant to insects after transferring a BT , gene glyphosate-resistant plants , companies that deal with biotechnology, the importance of genetically modified plants and the dangers . of these plants	**5**	**15**

	evaluation The decision .11
biotechnology is an essential part of sustainable and efficient agricultural development	
Muhammad Saeed Al-Haffar (2013) Biotechnology and Genetic Engineering, Dar Al-Fikr	**Sources Learning And teaching .12**
Muhammad Saeed Al-Haffar (2013) Biotechnology and Genetic Engineering, Dar Al-Fikr	**Books decided Required ((methodology that Found**
	the reviewer Home (Sources)
	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
	Electronic references, websites

.1 Beekeeping :Course name
.2 Course Code
.3 Semester / year
Second semester/2023-2023
.4 date Preparation this the description
.5 shapes the audience Available
My presence
.6 number hours Academic (total) number Units (total)
hours, 3.5 units 5
name responsible The decision Academic (if more from name Mention and email (
lina.q@uokerbala.edu.iq M.D. Lina Qassem Eidan
Goals The decision

Goals Subject Scholarship	
	• Providing the student with the basic skills for raising bees using modern methods .
	• Learn about the most important honey bee products and how to benefit from them .
	• Identifying the life of bees and the most important morphological and physiological changes in members of the honey bee sect .
	• Requirements for establishing apiaries .
	• Identify the most important pastures and how to preserve and develop them .
	• Identify the most important honey bee diseases, diagnose them, and how to combat them.

.9 Strategies education And learning

.Gaining experience, skill, and ability to deal with bees- Gaining the ability to distinguish between methods of - .solving beekeeping problems .Dealing with beekeeping theoretically and practically- Training on the basics of beekeeping using modern - .methods .Training on the necessary tools for beekeeping – .Training in diagnosing bee diseases and pests -	The strategy

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily exam	Lectures	The economic importance of beekeeping	Statement of the economic importance of beekeeping	5	1
Daily exam	Lectures	Types of honey bees and their breeds	Distinguish between honey bee types and breeds	5	2
Daily exam	Lectures	The external appearance of bees	Identify the external appearance of bees	5	3
Daily exam	Lectures	Internal appearance of bees	Knowledge of the functions of the internal organs of bees	5	4
Monthly exam					
Daily exam	Lectures	Work of beekeepers	Learn about the work of beekeepers	5	5
Daily exam	Lectures	The life of bee individuals	Understanding the life cycle of bees	5	6
Daily exam	Lectures	Establishing and managing apiaries	How to establish and manage apiaries	5	7
Daily exam	Lectures	Bee products	Learn about bee products	5	8
Monthly exam					

Daily exam	Lectures	Bee pests	Identify bee pests and how to combat them	5	9
Daily exam	Lectures	False mothers, expulsion, and theft	Identifying false mothers and expulsions Theft and how to get rid of it	5	11
Daily exam	Lectures	Honey production and preservation	How is honey produced and ?preserved	5	12

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And teaching .12	
Books decided Required ((methodology that Found	Beekeeping / Abdul Baqi Al-Omari
the reviewer Home (Sources)	Encyclopedia of bees
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	Beekeeping is a science and a hobby
Electronic references, websites	-----

:code	Subject: Biochemistry	third level	Mandatory (essential)
Number of units: 3.5	Practical hours: 3	Theoretical hours: 2	Planned teaching hours
Introduction to the science of biochemistry - the components of the living cell and their functions			Description of the curriculum
Introducing the student to chemical structures and the biological importance of organic compounds in living cells			The goal of teaching the curriculum
The student should be able to know the chemical structures and biological importance of organic compounds in living cells			Learning Outcomes
Biochemistry - Part One (1) and (2). Written by Dr. Ali Hassan Al-Daoudi			Methodical book

Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests	Semester grades
%30	%20	%5	%20	%25	

Threads

Number Hours	Article The process	Number Hours	Article Theory	The week
3	Specific detections of monosaccharides (general detection - detection of reducing properties - reducing power - distinction between aldehyde reducing sugars) And	2	Introduction to the science of biochemistry - the components of the living cell and their functions	1

	ketosis - pentagonal and hexagonal.			
3	Specific disclosures about disaccharides (general disclosure - distinguishing between monosaccharides and disaccharides distinguishing between reducing - and non- reducing disaccharides...)	2	Carbohydrates - their definition - their importance - their types - monosaccharides,) polysaccharides , polysaccharides)	2
3	Specific tests for polysaccharides general detection - reductive tests -) iodine test)	2	Monosaccharides - Similarities in monosaccharides - Derivatives of monosaccharides - The cyclic structure of sugars.	3
3	Hydrolysis of starch. Detection of starch degradation products.	2	Low polysaccharides - their reduced and non-reduced types	4
3	First month exam - a practical test to detect unknown sugar	2	Polysaccharides - homogeneous and heterogeneous types	5
3	General tests for proteins	2	First month exam	6
3	Detection of the presence of sulfur amino acids in proteins	2	Fats - their definition - their importance - fatty acids - their sections - their structures - their interactions - geometric similarities of fatty acids	7
3	Detection of aromatic amino acids in proteins	2	Sections of fats - simple fats - their types (oils, fats and waxes) - their compositions - fat constants	8
3	Detection of basic amino acids in proteins	2	Complex and derived fats - their types - their compositions	9
3	Precipitation of proteins - Denaturation or coagulation of proteins	2	Amino acids - their types - their structures - properties of amino acids - their interactions	10
3	Detection of unknown proteins using previous tests/second month exam	2	Peptides - proteins - their definition - their types - levels of protein synthesis - denaturation	11
3	Fat tests (distinguishing between saturated and unsaturated fatty acids copper acetate test - iodine test -...)	2	Second month exam	12
3	Emulsification of oils - saponification of fats	2	Nucleic acids - their importance - nucleotides - their functions - structure - types of nucleic acids	13
3	Detection of fat rancidity	2	Enzymes - their definition - the mechanism of enzyme action - their classification - inactive and active enzymes - factors affecting the speed of the enzymatic reaction.	14
3	Final exam	2	Exam	15

1. Course name: Design and analysis of experiments	
2. Course Code	
3. Semester / year	
The third/second stage	
4. date Preparation this the description	
2023/2/12	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
5 hours and 3.5 units	
name responsible The decision Academic (if more from name Mentionsed) And email	
a. Hello Marza Suhail	
Goals The decision	
Goals Subject Scholarship	
9. Strategies education And learning	
The strategy	Field visits: Organizing field visits to fields and greenhouses to familiarize students with scientific applications of a subject for designing and analyzing experiments Real-life examples: Using real-life examples and case studies to illustrate concepts for the design and analysis of experiments course Active Learning: Group Discussions Encourage students to discuss and solve problems together Continuous Assessment: Assignments and Tests Assess students' understanding of the material by designing and analyzing experiments through assignments and tests Linking the duration of designing and analyzing experiments to other courses

10. structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	The student's understanding of the historical overview of statistics, the definition of statistics, and the division of statistics	An overview of statistical terms and symbols	Lectures	Paper and daily testing

Paper and daily testing	**Lectures**	Examples of concentration metrics	Student understanding of measures of central tendency. Measures of centrality	**5**	**2**
Paper and daily testing	**Lectures**	Examples of measures of dispersion	Student understanding of measures of dispersion	**5**	**3**
Paper and daily testing	**Lectures**	Examples of hypothesis testing Examples of the t- test uses of the in testing statistical hypotheses	Student · understanding of hypothesis testing, statistical errors, hypothesis testing - t	**5**	**4**
Paper and daily testing	**Lectures**		Student understanding of the chi- square test	**5**	**5**
Paper and daily testing	**Lectures**	Examples of the uses of the chi-square test in testing statistical hypotheses	The student's knowledge of general concepts and definitions in designing and analyzing experiments and types of agricultural experiments	**5**	**6**
Paper and daily testing	**Lectures**	Examples of analysis of variance	Identify the most · important features of the completely randomized design	**5**	**7**
Paper and daily testing	**Lectures**	Examples of complete randomized design	Student · understanding of the average test	**5**	**8**
Paper and daily testing	**Lectures**	Examples of the least significant difference test and the Duncan test	The student's · knowledge of completely randomized block design	**5**	**9**
Paper and daily testing	**Lectures**	Examples of completely randomized block design	Student · understanding of the design of the Latin square	**5**	**10**
Paper and daily testing	**Lectures**	Examples of · global experiments according to a completely randomized	Identifying global experiences a	**5**	**11**

		design. Examples of global experiments according to a completely randomized block design. Examples of calculating least significant difference test values			
Paper and daily testing	**Lectures**	Examples of · global experiments according to a completely randomized design. Examples of global experiments according to a completely randomized block design. Examples of calculating least significant difference test values	Global experiments	**5**	**12**
Paper and daily testing	**Lectures**	-Examples of split plot design according to a completely randomized design. Examples of split -plot design according to a completely randomized block design. Examples of calculating least significant difference test .values	The student's knowledge of the design of split panels	**5**	**13**
Paper and daily testing	**Lectures**	-Examples of split plot design according to a completely randomized design. Examples of split -plot design according to a completely randomized block design. Examples of calculating	Split panel design	**5**	**14**

		least significant difference test .values			
Paper and daily testing	**Lectures**	Examples of correlation and simple linear regression	recognition and simple linear regression	**5**	**15**

evaluation The decision .11	
Theoretical semester exams (25%) - Practical semester exams (20%) - Daily (30%) exams (5%) - Practical final exam (20%) - Theoretical final exam	
Sources Learning And .12 teaching	
Books decided Required ((methodology that Found	**Introduction to statistics Dr. Submissive Mahmoud Al-Rawi. University presses Mosul, second edition, 2000. Principles of Statistics Khashia Al-Rawi, Naeem Thani Al-Muhammad, Muayyad Ahmed Al-Younis, Walid Khaled Al-Marani Design and analysis of agricultural experiments Khashia Al-Rawi and Abdul Aziz Khalaf**
the reviewer Home (Sources)	
Books And references Prevailing that recommend With it (.... Reports ,Magazines scientific)	**Arab Plant Protection Journal - Karbala Journal of Agricultural Sciences**
Electronic references, websites	

Course Name .1	
Environmental science	
Course Code .2	
Semester / year .3	
date Preparation this the description .4	
shapes the audience Available .5	
My presence	
number hours Academic (total) number Units (total) .6	
name responsible The decision Academic (if more from name Mentionsed) And email	
Goals The decision	
Goals Subject Scholarship	Providing students with experience in applied sciences and environmental theory Providing state institutions with specialized . -2 cadres Preparing cadres with high experience in . -3 environmental sciences and experience in knowing high-tech devices Providing students with scientific . 4- techniques in using devices and equipment that can be used in their theoretical and Research and study . 5- applied studies everything new in environmental sciences and keep pace with scientific developments . in this field

Strategies education And learning .9

The strategy	Demonstrations using diagrams, pictures and educational films Interactive discussion• self education• E- learning , scientific seminars•

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily and monthly + exams	Synchronous + lecture video lecture	Introduction, definition	**Important terms of ,origin**	**4**	**1**

activities and assignments		The environment and its characteristics Its relationship with other .sciences	**relations**		
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**branches of ,ecology The aquatic environment and Classification, terrestrial environment classification**	**Classification by Many standards**		**2**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Ecosystem and its components**	**Living and non-living factors**		**3**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Environmental determinants and endurance laws**	Leibeg law and Shelford laws + tolerance laws		**4**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Abiotic factors determining the environment**	Temperature, light, water, biosalts , gasses, nutrients etc		**5**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Food chain and food chain**	**The flow of energy in the ecosystem**		**6**
		Exam			**7**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Productivity and measurement ,methods Ecological pyramids**	**Types of ecological pyramids Types of productivity methods**		**8**

Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Gaseous and sedimentary cycles**	Water cycle Carbon cycle Nitrogen cycle Phosphorus cycle		**9**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Population and population distribution**	**Population density and dynamic +distribution Survival curves**		**10**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Communities, classification and analysis**	**Structure of societies**		**11**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Ecosystem diversity: freshwater ecosystems**	River Lakes Properties and structures		**12**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Ecosystem Diversity: Land ecosystem**	**Forests Pastures Deserts Mountains Properties and structures**		**13**
Daily and monthly + exams activities and assignments	Synchronous + lecture video lecture	**Ecological succession**	**Ecological succession is the term and development of ecosystems other than land and water**		**14**
		Exam			**15**

evaluation The decision .11

Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And teaching .12	
Books decided Required ((methodology that Found	Basics of environmental science, Prof. Dr. Bassem Al-Khafaji Foundations of environmental science IP ODM
the reviewer Home (Sources)	Principle of ecology
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	
Electronic references, websites	

1. Course Name	
Genetics	
2. Course Code	
3. Semester / year	
First semester 2023/2024	
4. date Preparation this the description	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
5 hours, 3.5 units	
name responsible The decision Academic (if more from name Mention and email (	
Mr. Dr. Adnan Abdul Jalil Lahuf adnan.lahuf@uokerbala.edu.iq	
Goals The decision	
Goals Subject Scholarship	The course aims to present the basics of classical genetics, modern molecular genetics, and genes and their role in transmitting genetic traits, along with the importance of this science in understanding the genetics of organisms, especially plants, and explaining the accompanying biological phenomena and processes, along with how to exploit genetic features and use them to overcome diseases and illnesses.
9. Strategies education And learning	
The strategy	1. Focus on genetic applications in the agricultural field : Using real-life examples and case studies from the field of agriculture to illustrate genetic concepts . Examples of plants 2. Field visits: Organizing field visits to farms and agricultural research centers to introduce students to practical applications of genetics . 3. Managing the lecture in an applied manner linked to the reality of daily life to attract the student to the topic of the lesson without straying from the core of the topic so that the material is flexible and capable of being understood and analysed. 4. Active learning: Group Discussions: Encourage students to discuss genetic concepts and their relationship to all aspects of life and solve problems together.

5. Continuous evaluation: Assignments and tests: Evaluate students' understanding of the scientific material by conducting daily and monthly assignments and tests.	

10. The decision structure

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
A short written test or an oral test	Lectures	A historical overview, experiments and laws of the world Mendel, definition of genetics and its importance	Learn about the history of the development of genetics and the influence of the scientist Mendel on the emergence of genetics		1
A short written test or an oral test	Lectures	Discovering genetic material and determining its chemical properties and composition	Identifying the studies and discoveries that led to identifying genetic material		2
A short written test or an oral test	Lectures	The process of replication and cloning of DNA	Understanding the process of DNA replication in cells		3
A short written test or an oral test	Lectures	The process of DNA cloning	Understanding the process of DNA replication in cells		4
A short written test or an oral test	Lectures	process of The translation of DNA	Understanding the process of DNA translation in cells		5
A short written test or an oral test	Lectures	Proteins, their types and functions	Identify proteins, their nature and the functions they perform inside the cell		6

A short written test or an oral test	Lectures	Genetic mutations	Identify genetic mutations, how they occur, and their major and minor types		7
A short written test or an oral test	Lectures	Genetic variation and reassortment	Understanding the process of genetic variation and reconfiguration and its impact on plants		8
A short written test or an oral test	Lectures	Sex inheritance	Identify and understand sex-linked genetics and its effect on living organisms, including .plants		9
A short written test or an oral test	Lectures	Cytoplasmic genetics	Identify and understand cytoplasmic genetics and its impact on living organisms, including .plants		10
A short written test or an oral test	Lectures	Genetic engineering and its agricultural applications	Learn about the concept of genetic engineering and its applications in the agricultural field		11
A short written test or an oral test	Lectures	General Review	General review of the academic material		12
		Monthly exam 1			13
		Monthly exam 2			14
					15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - (20%) Daily practical and attendance exams (5%) - Practical final exam .(30%) Theoretical final exam -	
Sources Learning And teaching .12	
Books decided Required ((methodology that Found	
the reviewer Home (Sources)	Introduction to Genetics by Abbas Hussein Principles of molecular genetics by authors Muhammad Baqir Sahib, Ali Hammoud Al-Saadi, and Haider Kamel Zidan Molecular biology of the genome, translated by Fathi Muhammad Abdel Tawab
Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific	Genome Journal Genetics Journal
Electronic references, websites	https://learn.genetics.utah.edu/

1. Course name: Insect physiology	
2. Course Code	
3. Semester / year	
2024-2023	
4. date Preparation this the description	
Chapter One 8/23/2023	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
5 hours, 3.5 units	
name responsible The decision Academic (if more from name Mention and email (	
MD Thamer Salman Jabr	
Goals The decision	
Goals Subject Scholarship	Identify the general systems in insects and know their functions
9. Strategies education And learning	
The strategy	1. Focus on the anatomical aspect of insects: Practical aspect: Using realistic experiments in the field of anatomy to clarify physiological concepts. Laboratory experiments: Organizing laboratory experiments to familiarize students with practical applications of insect physiology. 2- Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning: Group Discussions: Encourage students to discuss and solve problems together. 4. Continuous evaluation: Assignments and Quizzes: Assess students' understanding of insect physiology concepts through assignments and quizzes. 5. Linking insect physiology to other courses

10. structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation

Daily paper exam	Theoretical lectures + practical laboratory experiments	Introduction to insect physiology and the body wall of . insects	Students' understanding of instructions and directions for working in the insect physiology . laboratory	5	1
Daily paper exam	Theoretical lectures + practical laboratory experiments	Morphology .in insects	Teaching students about how to form in .insects	5	2
Practical tests	Theoretical lectures + practical laboratory experiments	Digestive system in .insects	Students learned about the systems through the anatomy of the digestive system of the American cockroach	5	3
Practical tests	Theoretical lectures + practical laboratory experiments	Enzymes and their role in .insects	Teach students how to detect enzymes	5	4
Practical tests	Theoretical lectures + practical laboratory experiments	Excretion in insects	Students learned about excretion in insects	5	5
Practical tests	Practical views	Respiratory And system nervous the system And circulation in insects	Students learn about the devices through the anatomy of the respiratory system and the nervous system (counting the number of) (heartbeats View the nerve .(cord	5	6
Practical tests		First test	First test	5	7

Practical tests	Laboratory practical applications	Sense organs in insects	Teaching students how to detect the sense organs of the American cockroach	5	8
Practical tests	Theoretical lectures + practical laboratory experiments	The female and male reproductive systems in insects	Introducing students to the effects of damaging the brain and nerve nodes	5	9
Practical tests	Laboratory practical applications	The male reproductive system in insects	Introducing students to the effects of damaging the brain and nerve nodes	5	10
Practical tests		Second test	Second test	5	11
Practical tests	Theoretical lectures + practical laboratory experiments	Role of insect hormones	Providing students with complete information about the role of insect hormones and their important role in insect control .applications	5	12
Practical tests	Laboratory practical applications	The role of insect pheromones	Providing students with complete information about the role of insect pheromones and their important role in insect control . applications	5	13
Practical tests	Theoretical lectures + practical laboratory experiments	Growth and methods of reproduction	Understanding growth processes and methods of	5	14

			reproduction .in insects		
	Theoretical lectures	General Review	General Review	5	15

evaluation The decision .11	
(% 20) Theoretical semester exams (25 %) - Practical semester exams Daily practical exams (5%) - Practical final exam (20%) - Theoretical - .(30%) final exam	
	Sources .12 Learning And teaching
Al-Darkazli, Thabet Abdel Moneim. 1980. Ministry of Higher Education and Scientific Research	Books decided Required (methodolog y that (Found
Insect Physiology - Part One, Ahmed Al-Shazly / Alexandria University	the reviewer Home ((Sources
Insect physiology journals	Books And references Prevailing that recommend With it Magazines) ,scientific (.... Reports
https://www.sciencedirect.com/book/9780124158191/physiolo .gical-systems-in-insects	Electronic references, websites

1. Name of the course
Fungi 1
2. Course code
3. Semester/year
First semester / 2023-2024
4. The date this description was prepared
5. Available forms of attendance:
In-person 6. Number of study hours (total) Number of units (total) 3.5 units 5 hours
Name of the course administrator (if more than one name is mentioned)
Email: iq.edu.uokerbala@naser.Yasir Name: Prof. Dr. Yasser Nasser Hussein Al-Humairi

Course objectives	
• Explaining the structure of fungi, their classification, and their importance to humans, with information about the physiology, genetics, activities, and environment of fungi, presenting most of the important fungal groups, and studying their most important characteristics.	Objectives of the study subject

9. Teaching and learning strategies	
1. Focus on agricultural applications: Real-life examples: Using real-life examples and case studies from the field of agriculture to illustrate mycology. Field visits: Organizing field visits to farms and agricultural research centers to introduce students to methods of growing fungi. 2. Use of technology: Websites: Teaching students how to use programs and websites specific to fungi. Simulation: Using simulation programs to represent the life cycles of fungi and enhance understanding of concepts. Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning: Group discussions: Encouraging students to discuss the taxonomic keys of fungi 4. Continuous assessment: Assignments and Quizzes: Assess student understanding of mycology through assignments and quizzes. 5. Linking mycology with other courses	Strategy: Real-

10. Course structure

Week Hours	Required Learning Outcomes	Name of the unit or topic	Learning method	Evaluation method
1	Introduction and definition of mycology.	Understanding the basic principles of mycology.	Lectures	Daily exam 1 Paper-based exam
2	Understanding the body structure of fungi	Structure of the body of fungi	Lectures	Daily paper-based exam

Lectures are a daily paper exam		Fungal reproduction	Providing students with the ability to understand the	5	3
Lectures are a daily paper exam.		Classification of fungi	reproduction of fungi. Students' understanding	5	4
Lectures are a daily paper exam.		Classification of	and understanding of the taxonomy of fungi.	5	5
Lectures are a daily paper exam.		gelatinous fungi, chytrid-	Students' knowledge of the taxonomy of gelatinous	5	6
A monthly exam. A monthly paper exam. Lectures		like fungi, monthly examinations	and students' understanding of chytrid-like fungi. Monthly exam.	5	7
are a daily paper exam.		Reticulolytic fungi,	Students' understanding of reticulated	5	8
Lectures are a daily paper exam.		oomycetes	gelatinous fungi. Providing students with concepts about oomycetes	5	9
Lectures are a daily paper exam.		Taxonomic key to fungi	and methods of classifying them. Ability to solve	5	10
Lectures are a daily paper exam.		Trichophyton or velvet	the taxonomic key for fungi. Understanding velvety	5	11
Lectures are a daily paper exam.		fungi are mating fungi	fungi and their biological applications.	5	12
Lectures are a daily paper exam.		Cactrid fungi	Understanding symbiotic	5	13
Lectures are oral tests.		General Review	or zygotic fungi. Understanding chytrid fungi. General review.	5	14
		Monthly exam		5	15

11. Course evaluation	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Learning and teaching	
resources Required textbooks (methodology, if any)	Jabr, Kamel Salman. Fungi lectures for the third year of plant
(Sources) Main References	protection, unpublished. Alexopoulus, CJ1996.Introductory-2 Mycology.4ed.John Wily & Sons
Mainstream recommended books and (scientific journals, reports...)	Webster, J. and R.Weber.2007 Introduction to Fungi.3ed .Cambridge University Press
, Internet sites, electronic references	com.mycobank.www://https

1. Name of the course
Fungi 2
2. Course code
3. Semester/year
Second semester / 2023-2024
4. The date this description was prepared
5. Available forms of
attendance:
In-person 6. Number of study hours (total) Number of units
(total) 3.5 units 5 hours
Name of the course administrator (if more than one name is mentioned)
Email: iq.edu.uokerbala@naser.Yasir Name: Prof. Dr. Yasser Nasser Hussein Al-Humairi

Course objectives	
• Explaining the structure, classification and importance of fungi For humans, with information about the physiology, genetics, activities, and ecology of fungi, presenting most of the important fungal groups, and studying their most important characteristics.	Objectives of the study subject

9. Teaching and learning strategies	
1. Focus on agricultural applications: life examples: Using real-life examples and case studies from the field of agriculture to illustrate mycology. Field visits: Organizing field visits to farms and agricultural research centers to introduce students to methods of growing fungi. 2. Use of technology: Websites: Teaching students how to use programs and websites specific to fungi. Simulation: Using simulation programs to represent the life cycles of fungi and enhance understanding of concepts. Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning: Group discussions: Encouraging students to discuss the taxonomic keys of fungi 4. Continuous assessment: Assignments and Quizzes: Assess student understanding of mycology through assignments and quizzes. 5. Linking mycology with other courses	Strategy: Real-

10. Course structure

Learning method and evaluation method	Name of the unit or topic	Week Hours Required Learning		
Lectures are a daily paper exam	Row Hymenoascomycetes Under a row	Outcomes: Understanding	5	1
		cyst fungi, their structure and classification		

		Pyrenomycetes, their general characteristics, classification, rank ,Xylariales			
Lectures are a daily paper exam		Order Hypocreales, order Clavicipitales, order Ophiostomatales, order Diaporthales.	Understanding cyst fungi, their structure and classification	5	2
Lectures are a daily paper exam		Row Hymenoascomycetes Rank Pezizales(Operculate (discomycetes), its features, importance, classification, family Pezizaceae, family Tuberaceae, family Morchellaceae. – Row Order Hymenoascomycetes Helotiales(Inoperculate (discomycetes), their general features, importance, classification, family. Sclerotiniaceae	Understanding cyst fungi, their structure and classification	5	3
Lectures are a daily paper exam		Row Hymenoascomycetes Rank Lecanorales(Lichenized (fungi), the life of lichens and their	Understanding cyst fungi, their structure and classification	5	4
Lectures are a daily paper exam		importance. Phylum Basidiomycetes Basidiomycota: Phylum: its general characteristics, existence and importance, basidiomycophore, mechanism of release of basidiomycota, types of mycelium, asexual and	Understanding cyst fungi, their structure and classification	5	5
Lectures are a daily paper exam		sexual reproduction, classification. Describe the homologous basidiomycete fungi Homobasidiomycetes Structure and appearance of fruiting bodies, their importance, and classification.	Understanding cyst fungi, their structure and classification	5	6

Exam, monthly paper exam, monthly lectures, daily paper exam	The first month	Monthly exam	5	7
	Describe the homologous basidiomycete fungi Homobasidiomycetes Structure and appearance of fruiting bodies, their importance, and classification. First month exam	Understanding basidiomycetes, their structure and classification	5	8
Lectures are a daily paper exam	Describe symmetric basidiomycetes, under row Gasteromycetes, development and genetic pathway of subclass Gasteromycetes, their importance,	Understanding basidiomycetes, their structure and classification	5	9
Lectures are a daily paper exam	classification. Describe symmetric basidiomycetes, under row Gasteromycetes, development and genetic pathway of subclass Gasteromycetes, their importance,	Understanding basidiomycetes, their structure and classification	5	10
Lectures are a daily paper exam	classification. Describe the differentiated basidiomycete fungi Class Heterobasidiomycetes Order Ceratobasidiales, Order Dacrymycetales, Order Auriculariales, Order Tremellales.	Understanding basidiomycetes, their structure and classification	5	11
Lectures are a daily paper exam	Describe the homologous basidiomycete fungi Homobasidiomycetes Structure and appearance of fruiting bodies, their importance, and classification. First month exam	Understanding basidiomycetes, their structure and classification	5	12
Lectures are a daily paper exam	The difference between cyst fungi and basidiomycetes	Understand the difference between cyst fungi and basidiomycetes	5	13
Lectures and oral tests	General Review	General Review	5	14
	Monthly exam		5	15

11. Course evaluation	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
12. Learning and teaching	
resources Required textbooks (methodology, if any)	Jabr, Kamel Salman. Fungi lectures for the third year of plant protection, unpublished. Alexopoulus, CJ1996.Introductory-2 Mycology.4ed.John Wily & Sons
(Sources) Main References	Webster, J. and R.Weber.2007 Introduction to Fungi.3ed .Cambridge University Press
Mainstream recommended books and references (scientific journals, reports...)	https://www.mycobank.com ,
, Internet sites, electronic references	

1. Course name: Nematodes	
2. Course code: 3.5	
3. Semester / year: First semester 2032-2024/2	
4. date Preparation this Description 4/24/2024	
5. shapes the audience Available in person My presence	
6. number hours Academic (total) 6 number Units (total) 6	
name responsible The decision Academic (if more from name Mentionsed) And email	
Mother Dr. Istabraq Muhammad Abdel Reda Saeed Estabraq.m@uokerbala.edu.iq	
Goals The course introduces students to the importance of... Plant pathogenic nematodes and their economic impact. Identifying the anatomy of plant pathogenic nematodes and the most common diseases they cause.	
Goals Subject Scholarship	Educational and practical preparation for students
9. Strategies education Students gain experience and practical skills in isolating and diagnosing plant pathogenic nematodes	
The strategy	Field visits and microscopic laboratory training Use of laboratory equipment and tools Students give some lectures prepared by the teacher

10. structure The decision

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	6	The history of the development of nematology, including the definition of nematodes	Introductions to the study of plant nematodes , an introduction to some practical methods, a presentation of the methods and tools used in	Theoretical lectures	Daily tests

		studying them, optical microscopes , sieves, filters, fiberglass , fabrics , funnels . and holders	**and the group of caecilians, the economic importance of nematology , and a historical overview of the relationship of plant nematology to other .sciences**		
Daily tests	**Daily lectures**	**Extraction methods And extract Nematodes from their samples (soil, plant part Extraction methods And extract Nematodes from soil samples . Methods Extract And extract Nematodes from their samples (soil, plant part Extraction methods And extract Nematodes from soil samples**	**The external and internal structure of the nematode includes the general structure of the body, the body wall, the epidermis layer, the bodily muscles, the body cavity, and the digestive canal. Figure 2**	**6**	**2**
Daily tests	**Daily lectures**	Identifying the stages of development of the nematode life Ad) ,cycle (eggs 1, J2, J 3, J4, for J, 5	**Some vital functions and actions in nematodes include movement, moulting , hatching, the general life**	**6**	**3**

			cycle, methods of reproduction, methods of laying eggs, .and nutrition		
			Monthly test 1		**4**
Daily tests	**Daily lectures**	Training students on the process of identifying, diagnosing, and examining nematode samples extracted from them	**Study of the classification of some genera in the world and Iraq, including: the general description of each genera and the distinctive characteristics of the male, female, and larvae, and drawing them in the lecture for .five genera**	**6**	**5**
Daily tests	**Daily lectures**	**Training students on the process of identifying, diagnosing, and examining nematode samples extracted from them**	**6 Nemato de taxonomy , which includes the phylum Nematode , its categorical orders, and a simplified division of the most important genera of plant . nematodes**	**6**	**6**
Daily tests	**Daily lectures**	**and permanent microscopic preparations and examining them under an optical microscope**	**Study of the classification of some genera in the world and Iraq, including: the general description of each genera and the distinctive characteristics of the male, female, and larvae, and**	**6**	**7**

			drawing them in the lecture for five genera.		
Daily tests	Daily lectures	Studying and drawing some of the phenotypic and anatomical characteristics of nematodes , the front of the head, types of spears, the digestive system , the tail region, and the male and female reproductive systems.	A study of the classification of some genera in the world and Iraq, including: the general description of the genus and the distinctive characteristics of individuals for five other nematode genera.	6	8
Daily tests	Daily lectures	A simplified key to defining the important genera of plant nematodes , root knot nematodes , and slow decline nematodes . Wheat wart	Factors affecting the life of nematodes and their relationships include the soil environment, the root zone, the plant environment, the distribution and activity of nematodes in the soil, horizontal and vertical distribution, survival and means of spread. Nematodes	6	9
Daily tests	Daily lectures	Methods of growing nematodes on their plant hosts that they infect, according to each type of nematode and plant, and their	Pathological symptoms of plant nematode infection include external symptoms, internal symptoms, and symptoms on... The Green A , Group	6	10

		.pathogenicity	Symptoms on Root group		
			Monthly test2		11
training	Daily lectures	3 Study of some phenotypic characteristics the nervous , system , and the excretory system	biological relationship between plant nematodes and other living organisms, including fungi, bacteria, viruses, complex diseases and transmission in the field of .plant viruses	6	12
Daily tests	Daily lectures	Evaluation of some modern methods of control and the use of pesticides to combat nematodes	Diseases caused by nematodes on plants include the most important diseases of the root group, including: nematodes on citrus fruits, root knot nematodes , and nematodes on citrus fruits . Dwarf , false deformity nematode , nematode Lancellidae , spiral nematode	6	13
Daily tests	Daily lectures	Using environmentall y friendly methods for control and focusing on biological methods	Nematode classification includes the phylum Nematode , its taxonomic ranks, and a simplified division of the most important genera of plant . nematodes	6	14
			Monthly test 3		15

evaluation The decision Daily test - monthly test .11	
Methodological books as well as keeping up with modern research	Sources Learning And teaching .12
Al-Hazmi's book - Al-Zarri – Plant Nematology Book by Abu Gharbia	Books decided Required ((methodology that Found
Al-Hazmi's book - Al-Zarri – Nematology book	the reviewer Home (Sources)
Arab Prevention Plant pathology Journal	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Plant nematodes	Electronic references, websites

1. Course Name	
Combat jungles	
2. Course Code	
3.5	
3. Semester / year	
Second semester 2023-2024	
4. date Preparation this the description	
24=2-4-23	
5. shapes the audience Available	
My presence	
6. number hours Academic (total) number Units (total)	
6	
name responsible The decision Academic (if more from name Mentionsed) And email	
Estabraq > Prof. Dr. Istabraq Muhammad Abdel Reda Saeed m@uokerbala.edu.iq	
Goals The decision	
Introducing students to jungles, their types, and the most important jungles spread in the Iraqi environment	Goals Subject Scholarship
9. Strategies education And learning	
Identifying the nature of jungles, their most important harms, their relationship with humans and animals, as well as their benefits in the field of industry, breeding and improving plants.	The strategy
10. structure The decision	

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	6	Jungle environment including: an overview of the development of agriculture	How to collect, dry and preserve bush specimens	Daily lectures	Daily tests
2	6	Defining the bush and studying its benefits, harms, acclimatization,	Showing films or slides about the most important jungles	Daily lectures	Daily tests

			methods of spread, and competition .with crops		
Daily tests	**Daily lectures**	Conduct simple experiments on control methods	**Types of plant classification, bush resistance, methods of dividing it, and the principles adopted in 1 dividing it**	**6**	**3**
Daily tests	**Practical exercises**	Introduction to the natural and chemical characteristics of pesticides	Study of agricultural mechanical, biological and chemical methods of bush resistance	**6**	**4**
Daily tests	**Sample collection**	Calculate the amount of pesticide with the application	Chemical methods, a glimpse into the history of bush chemical resistance	**6**	**5**
First monthly test	**-**	**-**	**--**	**6**	**6**
Daily tests	**Daily lectures**		Definition of pesticides and their characteristics	**6**	**7**
Daily tests	**Daily lectures**		**Factors that determine the effect of the pesticide**	**6**	**8**
Daily tests	**Daily lectures**	Plant density study	Selective pesticides, their classification and factors affecting it	**6**	**9**
Daily tests	**Sample -collection**	**Means of spread and reproduction**	Persistence of pesticides in soil, the process of pesticide catabolism **and its residues**		**10**
Second monthly test	**-**	**-**		**6**	**11**

Daily tests	Daily lectures	Calibrating sprinklers And use it	The study of chemical groups, including chemical composition, chemical symbol, and physical and chemical properties	6	12
Daily tests	Daily lectures	Collect desk resources	Methods of application and behavior of pesticides in soil and plants, and studying the method of killing	6	13
Daily tests	Daily lectures	Practical exercises	Study the most important methods used in disposing of pesticide residues	6	14
Third-monthly test	-	-	-	6	15

evaluation The decision .11	
Daily testing, monthly testing, and reporting	
	Sources Learning And teaching .12
	Books decided Required ((methodology that Found
Preparing lectures	the reviewer Home (Sources)
The jungle book scheduled	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Jungle sites	Electronic references, websites

Course Name .1	
The theoretical agricultural dream	
Course Code .2	
Semester / year .3	
Second semester 2023-2024	
date Preparation this the description .4	
2023	
shapes the audience Available .5	
My presence	
number hours Academic (total) number Units (total) .6	
hours 3.5 academic units 5	
name responsible The decision Academic (if more from name Mentionsed) And email	
a. Taha Musa Muhammad Mansour Al-Suwaidi taha.m@uokerbala.edu.iq	
Goals The decision	
Goals Subject Scholarship	.1 agricultural dream Definition of (Acarology) . .2 Its relationship to the arthropod phylum and methods of classification . .3 Identify the most important species harmful to agricultural production . .4 Species useful in biological control of insects and mites
Strategies education And learning .9	
The strategy	.1 : Focus on the most important agricultural mite pests in the field Field visits: Organizing field visits to farms and agricultural research centers to familiarize students with the most important types of agricultural mites and the symptoms of infection they cause in the most important economic crops . .2 Use of technology: Electronic learning resources: Providing electronic learning resources, such as videos PPt . .3 Active learning: Group discussions: Encouraging students to discuss the most important types of mites, their harm, the crops they infect, and ways to combat them. .4 Continuous evaluation: Assignments and Quizzes: Assess students' understanding through assignments and quizzes. .5 Linking agricultural science to entomology and the most important differences between them

structure The decision .10

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	Introduction and historical review	A historical overview of the science of acrostics and ji in the world and Iraq and the	Lectures	Paper exam

		factors that helped it survive and .spread			
Paper exam	Lectures	economic importance of the dream	Understanding the economic importance of the agricultural dream	5	2
Paper exam	Lectures	Habits and habitat. The location of the mite in the animal kingdom and a study of some of its important families	Knowing the customs and habitats of the dream	5	3
Paper exam	Lectures	Internal anatomy of a dream	Knowing the vital systems of the dream	5	4
Paper exam	Lectures	Common red mite family	Clarifying the most important families of vegetarian nutrition	5	5
Paper exam	Lectures	The false red dream family	Clarifying the most important families of vegetarian nutrition	5	6
Paper exam	Lectures	Hairy wrist dream family	Clarifying the most important families of vegetarian nutrition	5	7
		Monthly exam	Monthly exam	5	8
Paper exam	Lectures	Ariophytic mite family	Clarifying the most important families of vegetarian nutrition	5	9
Paper exam	Lectures	Predatory mites	Know the most important types of predatory dreams	5	10
Paper exam	Lectures	Dream of stored grains and food	Knowing the most important types of mites stored food items	5	11
Paper exam	Lectures	Families of ticks and the most important thing that distinguishes them from mites	Know the most important families of ticks and the difference between them	5	12
Paper exam	Lectures	Variety honey bees	Explain the importance Variety honey bees	5	13
Paper exam	Lectures	Microbicides	Know the most important types of mite pesticides	5	14
		Monthly exam	Monthly exam	5	15

evaluation The decision .11	
	Sources Learning And teaching .12

Non-insect animal pests and methods of controlling them 2. Mites that are harmful to economic plants and methods of combating them	Books decided Required ((methodology that Found
Mites injurious to economic plants	the reviewer Home (Sources)
Arab Plant Protection Journal, Karbala Journal of Agricultural Sciences	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific
Electronic reference for informatics	Electronic references, websites

1. Name of the course
Pesticides 2. Course code
3. Semester/year
First semester / 2023-2024
4. Date this description was prepared
5. Available attendance forms
My presence
6. Number of academic hours (total) Number of units (total)
5 hours
Name of the course official (if more than one name is mentioned) and email
Kadhim.h@uokerbala.edu.iq
Course objectives

1-A historical overview of the origin and development of pesticides 2-Knowing the classification of pesticides 3-Knowing the correct methods for using pesticides 4- The dangers of pesticides and how to avoid them. 5- The correct use of pesticides	Objectives of the academic subject

9. Teaching and learning strategies
Identifying all types and types of strategic pesticides. Identifying and understanding the most important indicative and warning signs. Field visits to fields to learn about methods of mixing and optimal use of pesticides. Identifying methods of pesticide poisoning on plants, avoiding them, and treating them if they occur.

10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Week hours	
Attend students' discussion		General introduction to pesticides	Understanding the reasons for using pesticides and their role in agricultural production	5	1
Attend a paper exam		General methods of pest control	Identifying the most important methods used in combating various agricultural pests	5	2
Attend a paper exam		Some important terms and definitions	Understanding all the important terms and abbreviations used in the field of pesticides	5	3
Attend a paper exam		Factors determining the degree of toxicity	Identifying methods of pesticide poisoning and the types of poisoning and their risks M	5	4
	My presence			5	5

Attendance to answer the questions of the first month		General and comprehensive	review	5	6
Attend the students' discussion		Pesticide Insecticides	Knowing everything related to pesticides and their	5	7
Attend a paper exam		Division of herbicides (bush)	classifications. Knowing the details and types of bush pesticides	5	8
Attend students' discussion		Fungicides	Knowing the types of fungicides, their classification, and their mechanisms	5	9
Attend a paper exam		Metabolism Of Chemical Pesticides	of action. Knowing the metabolism and transformations of chemicals		10
	My presence		Monthly review	5	11
Attendance to answer the questions of the first month		General and comprehensive	exam	5	12
Pesticides and environmental pollution, in-person student discussion			Knowing the effect of pesticides on the	5	13
Attend a paper exam		Pest resistance to pesticide action	environment and the types of pollution.	5	14
	My presence in the field		Development of resistance among pests against pesticides. A field visit to the site, conducting mixing operations for pesticides, and loaning different types	5	15

11. Course evaluation
Theoretical semester exams (20%) - Theoretical daily exams (10%) - The practical semester exams (15%) - The practical daily exams (5%) - The practical final exam (20%) - The theoretical final exam (30%).

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Pesticides Khaled Al-Adel
Main references (sources)	
Main recommended books and references (scientific journals, reports).	Insecticides Nizar Mustafa Al-Maleh
Electronic references, Internet sites	com.meleigi://https/ Plant Health https:// www.fao.org/pesticide-registration-toolkit/information-/sources/scientific-reviews/ar

:code	Material: bio-resistant	The fourth stage	Mandatory (essential)
Number of units: 3.5	Practical hours: 3	Theoretical hours: 2	Planned teaching hours
			Description of the curriculum
Introducing students to the importance of biological resistance in resisting agricultural pests and reducing their economic damage			The goal of teaching the curriculum
Introducing students to the importance of biological resistance in resisting agricultural pests and reducing their economic damage			Learning Outcomes
			Methodical book

Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests	Semester grades
%30	%20	%5	%20	%25	

Threads

Number Hours	Article The process	Number Hours	Article Theory	The week
3	Introduction to the role of biological resistance in plant protection	2	Insects and their relationship with the environment , conflict between humans and insects, insect damage	1

3	Procedures for introducing vital :enemies	2	Benefits of insects, natural selection, sexual selection, natural equilibrium	2
3	Diagnosing the pest as an exotic -1 .species	2	:Natural resistance to insects	3
3	Determine the original habitat of -2 .the introduced pest	2	Independent factors, dependent factors	4
3	External exploration of biological -3 .enemies	2	Stages of dormancy, activity, heat death, humidity, sunlight, wind and rainfall	5
3		2	Soil texture and pH, biological factors, food quality, food quantity	6
3	.Quarantine for imported models -4	2	Sex ratio and egg hatchability	7
3	Breeding and mass propagation of -5 .biological enemies	2	Biological resistance to insect pests	8
3	Colony formation	2	Biological resistance and the phenomenon of multipopulation, the emergence of the evolution of biological resistance	9
3	Final evaluation of vital enemies method of isolation and exclusion,)) .((construction of life tables	2		10
3	Important groups of insect parasites	2	Methods used in biological resistance programs	11
3	Orders to which parasitic insects :belong	2	Importing vital enemies	12
3	.Parasites of the order Hymenoptera -1	2	Providing protection for vital enemies	13
3	.Parasites of the order Diptera -2	2	Breeding and multiplying biological enemies	14
3		2		15

1. Course Name
Crop insects
2. Course Code
3. Semester / year
Second semester / 2023-2024
4. date Preparation this the description
2023-12-12
5. shapes the audience Available
My presence
6. number hours Academic (total) number Units (total)
hours - 3,5 units 5
name responsible The decision Academic (if more from name Mention and email (
Prof. Mushtaq Talib Muhammad Ali mushtak.t@uokerbala.edu.iq
Goals The decision

Goals Subject Scholarship	This course aims to make the student knowledgeable and professional versed To learn about the economic importance of field crop insects, the basics of insect control, definition of crop insects, description and hosts, damage, manifestations of infestation, life cycle, distribution and methods of combating field crop insects.
9. Strategies education And learning	
The strategy	- Gaining experience, skill, and practical ability in detection About warehouse pest infestations. - the stages of Gaining the ability to distinguish between stored insects. - Acquiring the skill of periodic inspection , theoretically and practically, of materials stored in silos and grain stores - Use preventive methods Such as heat and ozone gas as safe and clean alternatives away from the use of diagnose The student's ability to .chemical pesticides and distinguish between injuries and symptoms of injury resulting from insects and the damage resulting .from them and estimate the severity of the injury - Distinguishes the life stages of harmful insects and their . relationship to their ability to infect plants - Knowing the economic importance of harmful insects to determine whether the insect is worth controlling or .whether it is not economically important Practicing modern integrated methods in combating harmful He chooses the best safe alternatives for pest control . insects and how to best use chemical pesticides for pest control
10. structure The decision	

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily paper test	Lectures	A historical overview of crop insects in the world and Iraq and the factors that helped them survive and .spread	Explaining insects of multiple plant families	5	1
Daily paper test	Lectures	The economic importance of crop insects and the most important damage they cause	An explanation of the economic importance of crop insects	5	2
Daily paper test	Lectures	Insects of many plant families Locusts - carob	Introducing students to insects of multiple plant families	5	3
Oral test	Lectures	Ground insect	Identifying, detecting and combating ground insects	5	4
Oral test	Lectures	Wheat and barley insects	An explanation of the most important insects of wheat and barley	5	5
First test	evaluation	First test	First test	5	6
Paper test	Lectures	Yellow and white corn insects	An explanation of the most important corn insects	5	7
practical test	Lectures	Insects of the legume family	Explaining the most important insects of the	5	8

			leguminous family		
Oral test	Lectures	Cotton insects	Explanation of the most important cotton insects	5	9
Paper test	Lectures	Sugar beet insects	revealing of Sugar beet insects	5	10
practical test	Lectures	Jet and clover insects	Illustration of jet insects and clover	5	11
Second test	evaluation	Second test	Second test	5	12
Oral test	Lectures	Sesame and safflower insects	Interpretation of a dream about stored materials		13
Paper test	Lectures	Birds and rodents	the Explaining most important types of birds	5	14
practical test	Lectures	Practical and field review	Practical and field review	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Final practical exam (20%) - Final theoretical exam (30%) .	
Sources Learning And .12 teaching	
Books decided Required ((methodology that Found	Field crop insects, Prof. Dr. Iyad Youssef Al-Haj Ismail, 90 pages
Books And references Prevailing that recommend With it (.... Reports ,Magazines scientific)	Insect journal
Electronic references, websites	https://www.mdpi.com/journal/insects

1. Course name: Fruit diseases
2. Course Code
3. Semester / year
Second semester 2023-2024
4. date Preparation this the description
2023/5/12
5. shapes the audience Available
My presence
6- number hours Academic (total) number Units (total)
5 Hours, 3.5 units
name responsible The decision Academic (if more from name Mention and email (
Name: Prof. Dr. Raja Ghazi Abdul Mohsen Email: abudlalmoohsin.rajaa@uokerbala.edu.iq
Goals Decision:

Goals Subject Scholarship:	The course presents the concepts of diseases that affect fruit trees and post-harvest diseases, the most important symptoms and signs of these diseases, the organism that causes the disease, the conditions suitable for the spread of the disease, the life cycle of the pathogen, and the most important methods of resistance.

9. Strategies education And learning	
The strategy	1. Focus on the most important diseases that affect fruit trees, post-harvest diseases, and ways to combat them: Real-life examples: Using real-life examples and case studies in the field of diseases affecting fruit trees and post-harvest diseases to illustrate the effects of pathogens on plants.
	2- Field visits: Organizing field visits to field research centers (greenhouses) orchards and Agricultural education to introduce students to practical applications.
	3. Active learning: Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises,

Group Discussions: Encourage students to discuss and solve problems together. 4. Continuous evaluation: Assignments and tests: Assess students' understanding of the concepts of diseases affecting fruit trees and post-harvest diseases. Through assignments and tests. 5. Linking fruit pathology to other courses	

10. The decision structure

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	Students understand them Diseases that affect fruit trees and post-harvest diseases And widely.	Introduction to the most important diseases that affect fruit trees and post-harvest diseases.	Lectures with Practical laboratory application	Daily paper exam
2	5	Providing students with models, slides, and pictures of the most important diseases that affect apples and marmots, along with field visits.	The most important diseases that affect apples and trout and ways to combat and reduce them.	Field observations with Laboratory practical application	Daily paper exam
3	5	Identify the most important models, slides, and pictures of the most important diseases that affect stone-stone trees	The most important diseases that affect stone-stone trees and ways to combat and reduce them	Lectures	Practical tests

			with field . visits		
practical test	Lectures Video	The most important diseases that affect grapes and their control and reduction	Identify the most important models, slides, and pictures of the most important diseases that affect grapes, with field visits	5	4
practical test		First test	First test	5	5
practical test	Lectures	The most important diseases that affect citrus fruits (Part One) and ways to combat and reduce them	Getting to know the most important models, slides, and pictures of the most important diseases that affect citrus fruits (Part One) with field visits	5	6
practical test	Lectures Video	The most important diseases The most important diseases that affect citrus fruits (Part Two) And ways to combat and reduce it	Providing students with models, slides, and pictures of the most important diseases that affect citrus, along with field visits	5	7
practical test	Lectures Video	The most important diseases that affect olive trees and ways to combat and reduce them	Providing students with models, slides, and pictures of the most important diseases that	5	8

			affect olive trees, along with field . visits		
practical test		Second test	Second test	5	9
practical test	Practical views	The most important diseases that affect palm trees and ways to combat and reduce them	Introducing students to their importance Diseases affecting palm trees through field . visits	5	10
practical test	Field and laboratory observations	The most important diseases that affect walnuts and ways to combat and reduce them	Providing students with models, slides, and pictures of the most important diseases that affect walnuts, along with . field visits	5	11
practical test	Lectures	The most important diseases that affect pistachios and ways to combat and reduce them	Identifying the most important diseases of pistachio . plants	5	12
practical test	Practical views	The most important diseases that affect figs and ways to combat and reduce them	Identify the most important diseases that . affect figs	5	13
practical test practical test	Lectures with Field and laboratory observations	The most important post-harvest diseases are to combat and reduce them	Identify the causes of post-harvest diseases and the most important modern methods for	5	14

			controlling and reducing disease .causes		
		Third test	Third test	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning And .12 teaching	
Books decided Required ((methodology that Found	Academic Press, Agrios , Plant - 1 and the book of pathology 19 diseases of horticultural plants
the reviewer Home (Sources)	Book: Tree diseases the fruit -2 (Subhi Suleiman) Diseases of fruit trees (Hussein (Muhammad Al-Arousi
Books And references Prevailing that recommend With Reports ,it (Magazines scientific (....	Plant Pathology Journal -3
Electronic references, websites	https://en.wikipedia.org/wiki/Plant_pathology **https://cropwatch.unl.edu/soybean-management/plant-disease**

1. Course name: Insect ecology
2. Course Code
3. Semester / year
First semester 2023-2024
4. date Preparation this the description
2023/20/8
5. shapes the audience Available
My presence
6- number hours Academic (total) number Units (total)
5 Hours, 3.5 units
name responsible The decision Academic (if more from name Mention and email (
Name: Prof. Sinai Muslim Al-Zarfi Email :sienaa.m@uokerbala.edu.iq
Goals Decision:

Goals Subject Scholarship:	The course presents the most important concepts related to insect ecology, the most important ongoing interactions between living organisms and their environment, and the impact of these intertwined and diverse relationships on each other, negatively or positively, which led to the dominance of some organisms and the decline or disappearance of other organisms. Thus, the numbers of each type of living organisms were determined according to the specific environmental and life factors and became in A state of natural balance.

9. Strategies education And learning	
The strategy	1. Focus on the most important environmental and life studies that help humans understand nature and overcome some of their difficulties, which is the study of the life behavior of living organisms and their environment: Real-life examples: Use real-life examples and case studies in The environmental field is to explain the environmental effects on living and non-living organisms.

agricultural For Field visits: Organizing field visits -2 environmental research centers to introduce students to .practical applications Electronic learning resources: Providing electronic learning resources, such as videos and interactive ,exercises :Active learning .3 Group Discussions: Encourage students to discuss and .solve problems together :Continuous evaluation .4 Assignments and Quizzes: Assess students' understanding of insect ecology concepts through .assignments and quizzes Linking insect ecology to other courses .5	

structure The decision .10

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily paper exam	Lectures	History and Studies of Ecology (Introduction) History of ecology and environmental classification	Understand the importance of studying insect ecology .broadly	5	1
Daily paper exam	Lectures Laboratory practical application	The environmental factors determining the growth and reproduction of insects	Insect rearing and propagation within specific environmental conditions - Insect rearing (a) Phased rearing - Continuous rearing - Internal rearing rooms Tools and - equipment for the insect rearing . laboratory	5	2

Practical tests	Lectures	Factors that helped spread insects	Identify the most important environmental factors that play a role in the distribution of insects in .nature	5	3
practical test	Lectures	Vital factors	Identifying the most important biological factors that determine the so-called natural balance and the vital balance of insects. Among these factors, competition stands out On food as a factor influencing the life of . insects	5	4
practical test	Lectures	Relationships between species and within a species	Students become acquainted with the relationships between species and within a single species by identifying them .practically	5	5
practical test	Lectures	First test	First test	5	6
practical test	Lectures Video	Insect reproduction ability	Insect rearing and propagation - Insect rearing methods (a)	5	7

			Phased rearing - Continuous rearing - Internal rearing rooms Tools and - equipment for the insect rearing laboratory. Steps for rearing insects		
practical test	Lectures Video	Construct life tables	Providing students with complete information on how to construct life) .tables Building C D E L Life For insect Under T The influence of environmental conditions . (specific)	5	8
practical test	Lectures Video	Natural selection and balance natural	It is known as the theory of natural selection	5	9
practical test	Practical views	Host selection & host specificity	Introducing students to field application , taking samples from fields , and diagnosing existing types of insects, predators, and . parasites	5	10
practical test	Practical views	Population Dispersal Distribution &Aggregation	Understand the most important methods for estimating	5	11

			insect infestation percentages together Examples of how to . calculate it		
practical test		Second test	Second test	5	12
practical test	Practical views	control and veterinary ? system	Learn about estimating damage and losses caused by insects: examples of estimating plant damage caused by insects - general methods of how insects .infect plants	5	13
practical test		Third test	Third test	5	14
practical test	Lectures	General Review	General Review	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical final exam (30%).	
Sources Learning .12 And teaching	
Books decided Required ((methodology that Found	Insect Ecology book - 1 Insect ecology book 1984
the reviewer Home ((Sources	Basics of insect ecology-2 Muhammad Ali Muhammad Arab Book House Library
Books And references Prevailing that recommend With it	Insect Ecology Journal -3

	,Magazines scientific) (.... Reports
https://en.wikipedia.org/wiki/Insect_ecology https://www.noor-book.com/tag/%D8%B9%D9%84%D9%85-%D8%A8%D9%8A%D8%A6%D9%87-%D8%A7%D9%84%D8%AD%D8%B4%D8%B1%D8%A7%D8%AA	Electronic references, websites

:code	Subject: Integrated pest management	The fourth stage	Mandatory (essential)
Number of units: 2	Practical :hours	Theoretical hours: 2	Planned teaching hours
			Description of the curriculum
Introducing students to strategies Integrated pest management in terms of available programs and modern trends to preserve the environment and biological enemies and protect farmers and their wealth. Return to natural control (biological, agricultural, mechanical) and other control methods that preserve the .environment			The goal of teaching the curriculum
Introducing students to strategies Integrated pest management in terms of available programs and modern trends to preserve the environment and biological enemies and protect farmers and their .wealth			Learning Outcomes
Integrated pest management / Hamza Al-Zubaidi. 2. Integrated pest management / Muhammad Saeed Al-Zami 3. Insect ecology / Abdel-Baqi Muhammad Hussein - Mouloud Kamel - Moayed Ahmed. 4. Biological control For agricultural pests /Mohamed Fouad Sayed Tawfiq			Methodical book

Final theoretical exam	Final practical test	Daily theoretical tests	Practical quarterly tests	Theoretical semester tests	Semester grades
%50		%5		%45	

Threads

Number Hours	Article The process	Number Hours	Article Theory	The week
		2	pest control management , a historical overview of the stages of its development	1
		2		2
		2	Types of pests and the losses they cause to various agricultural crops	3
		2		4
		2	The basic elements of integrated management programs, community, ecosystem, pest, and their interrelationship	5
		2		6
		2	sampling programs , monitoring, and continuous pest forecasting	7
		2		8
		2	pest management , their types, methods of use , and times of use	9
		2		10
		2	The role of plant resistance in pest management , its benefits, resistance mechanism, physiological foundations of plant resistance, inheritance of resistance , horizontal resistance , vertical resistance, genetic engineering, its advantages, difficulties facing the future of plant resistance	11
		2		12
		2	The role of biological resistance in pest management , the use of parasites and insect predators, the use of insect-pathogenic microorganisms, the use of pathogenic plant pathogens .against bushes	13
		2		14

		2	behavioral resistance in pest management , its benefits, determinants, visual means, including sticky traps and their types, reflective covers, light traps, .auditory aids, and olfactory aids	15

Course Name .1	
theoretical viruses	
Course Code .2	
Semester / year .3	
The fourth stage, the second semester	
date Preparation this the description .4	
24_4_2024	
shapes the audience Available .5	
My presence	
number hours Academic (total) number Units (total) .6	
% 3.5 :Number of units **- hours75**	
name responsible The decision Academic (if more from name Mentionsed) And email	
aqeel.n@uokerbala.edu.uk Prof. Dr. Aqeel Nazzal Berber	
Goals The decision	
Goals Subject Scholarship	**Introducing students to the importance of viruses that infect plants, the losses resulting from their infection, and methods of resisting them and reducing .their damage**
Strategies education And learning .9	
The strategy	Plant Viruses aims to enhance students' understanding of the basics of plant viruses and their effects on crops, in addition to developing their skills in recognizing symptoms, diagnosis and : prevention of viral diseases. This can be achieved by 1. Employing interactive curricula: encouraging discussions and interactive activities that help students understand the interaction of viruses with plants, their methods of transmission, and their . consequences 2. Practical application: Providing practical learning opportunities such as field visits and practical laboratories to enhance students' . understanding of theoretical concepts 3 Focus on research: Encourage students to conduct small-scale research on plant viruses to enhance their skills in analyzing data . and drawing conclusions

structure The decision .10					
road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Tests practical) daily / / (quarterly	theoretical practical	Virology	A historical overview of the emergence and development of virology	5	1
Tests practical) daily / / (quarterly	theoretical practical	Features of viruses	The most important characteristics that distinguish viruses from other organisms	5	2
Tests practical) daily / / (quarterly	theoretical practical	Economic importance	Economic importance of viral plant diseases	5	3
Tests practical) daily / / (quarterly	theoretical practical	classification	Naming and classifying viruses	5	4
Tests practical) daily / / (quarterly	theoretical practical	Virus installation	Chemical structure of viruses	5	5
Tests practical) daily / / (quarterly	theoretical practical	Drosophila viruses	Morphological characteristics of viruses	5	6
Tests practical) daily / / (quarterly	theoretical practical	Virus transmission	Virus infection, infection, and transmission within plant tissues	5	7
Tests practical) daily / / (quarterly	theoretical practical	Doubled	Viruses multiply	5	8
Tests practical) daily / / (quarterly	theoretical practical	Viral infection	Mixed infection with viruses and their effects on plants	5	9
Tests practical) daily / / (quarterly	theoretical practical	Symptoms of viral diseases	Symptoms of external and internal viral plant diseases	5	10
Tests practical)	theoretical practical	Spread of the virus	Methods of transmission	5	11

daily / / (quarterly			and spread of plant viruses		
Tests practical) daily / / (quarterly	theoretical practical	Diagnosis	Diagnosis of plant viruses	5	12
Tests practical) daily / / (quarterly	theoretical practical	Resistance to viral diseases	Resistance to viral diseases	5	13
Tests practical) daily / / (quarterly	theoretical practical	viral diseases	The most important viruses that infect vegetable crops	5	14
Tests practical) daily / / (quarterly	theoretical practical	viral diseases	The most important viruses that infect field crops	5	15

11. The decision evaluation

It relies on adopting comprehensive educational strategies that include theoretical and practical aspects to understand plant viruses and their effects on crops. The following elements may be included in the course evaluation:

1. Assessing student understanding: Determine the extent to which students understand basic concepts such as the classification of plant viruses, their behavior, modes of transmission, and their effects on plants.

2. Evaluation of practical skills: Evaluation of students' ability to recognize symptoms of viral diseases, diagnose them, and apply prevention and control measures.

3. Performance evaluation: Evaluating students' performance in solving problems related to plant viruses and providing practical solutions.

4. Evaluation of research projects: Evaluation of students' ability to implement small research projects related to the analysis and study of plant viruses.

12. Sources Learning And teaching	
Books decided Required ((methodology that Found	**Qasim, Nabil Aziz Qasim. 2011. Plant viruses. University of Mosul, Ministry of Higher Education and Scientific Research.**

Qasim, Nabil Aziz Qasim. 2011. Plant viruses. University of Mosul, Ministry of Higher Education and .Scientific Research	the reviewer Home (Sources)
	Books And references Prevailing that recommend With it (.... Reports ,Magazines scientific)
	Electronic references, websites

.1 Course Name
Storage pests
.2 Course Code
.3 Semester / year
First semester / 2023-2024
.4 date Preparation this the description
2023-9-1
.5 shapes the audience Available
My presence
.6 number hours Academic (total) number Units (total)
hours - 3,5 units 5
name responsible The decision Academic (if more from name Mentionsed) And email
mushtak.t@uokerbala.edu.iq Prof. Mushtaq Talib Muhammad Ali
Goals The decision

Goals Subject Scholarship	Providing students with basic recognition and detection skills About the most important pests of stored materials that are infected during the storage period in stores of grains and storable foodstuffs, and . identifying ways to protect and combat them

.9 Strategies education And learning

The strategy	- Gaining experience, skill, and practical ability in detection About warehouse pest infestations. - the stages of Gaining the ability to distinguish between stored insects. - Acquiring the skill of periodic inspection , theoretically and practically, of materials stored in silos and grain stores Use preventive methods Such as heat and ozone gas as safe and . clean alternatives away from the use of chemical pesticides

.10 structure The decision

road Evaluation	road Learning	name Unit or the topic	Outputs Learning required	hours	the week
Daily paper test	Lectures	Common methods of storing grains in Iraq	An explanation of the most common methods of storing grains	5	1
Daily paper test	Lectures	Signs of damage to stored grains due to their infection with types of warehouse pests	Students' knowledge of the most important signs of	5	2

			spoilage of stored grains		
Daily paper test	Lectures	Direct and indirect damage to grains as a result of their infestation with warehouse insects and comparing them to field insect damage to grains .in the field	Informing students about the nature of direct and indirect damage to grains	5	3
Oral test	Lectures	Groups of insects of stored materials and their basic divisions	Identify the most important insect groups of stored material insects	5	4
Oral test	Lectures	Environmental and adaptation of warehouse insects, and a study of some environmental factors and their relationship to warehouse . insects	Clarifying the environmental impact and adaptability of stored insects	5	5
First test	evaluation	First test	First test	5	6
Paper test	Lectures	Nutritional preference of grain insects and stored materials and its most important indicators in the warehouse environment	Understanding the mechanism by which insects prefer one food to another	5	7
practical test	Lectures	Methods of controlling warehouse insects in general	Explaining the most important methods for combating warehouse insects	5	8
Oral test	Lectures	Traditional methods and their types, natural and mechanical control ,	Explaining traditional methods of control, whether	5	9

		biological methods and chemical methods using fumigants and their common types in control, mentioning their ideal . characteristics	natural, mechanical or other		
Paper test	Lectures	Suitable conditions for growth Warehouse fungi and the most important types of fungi associated with grains and stored materials	Suitable conditions for growth Warehouse fungi	5	10
practical test	Lectures	Damage caused by fungi in warehouses and the most important types of mycotoxins common in grain stores infected with the common types of fungi that produce them. Types of grain bacteria and stored materials prevalent in grain stores	Understanding the damage caused by fungi in warehouses	5	11
Second test	evaluation	Second test	Second test	5	12
Oral test	Lectures	Mites of stored materials - types, methods of detecting the infestation of stored materials by mites, and methods of control followed	Interpretation of a dream about stored materials		13
Paper test	Lectures	The most common types of rodents in grain stores, damage caused by mice and rats	the Explaining most important types of rodents	5	14

practical test	Lectures	Practical and field review	Practical and field review	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Final practical exam (20%) - Final theoretical exam (30%) .	
Sources Learning .12 And teaching	
Books decided Required ((methodology that Found	Al-Azzawi, Abdullah Falih and Muhammad Taher Mahdi (1983) Warehouse Insects. Mosul University Press
Books And references Prevailing that recommend With it ,Magazines scientific) (.... Reports	Journal of Stored Products Research
Electronic references, websites	https://www.sciencedirect.com/journal/journal-of-stored-products-research

1. Course name: Vegetable diseases and protected agriculture
2. Course Code
3. Semester / year
First semester 2023-2024
4. date Preparation this the description
2023/25/8
5. shapes the audience Available
My presence
6- number hours Academic (total) number Units (total)
5 Hours, 3.5 units
name responsible The decision Academic (if more from name Mention and email (
Name: Prof. Dr. Raja Ghazi Abdul Mohsen Email: abudlalmoohsin.rajaa@uokerbala.edu.iq
Goals Decision:

Goals Subject Scholarship:	The course presents the concepts of diseases that affect vegetable crops and ornamental plants, the most important symptoms and signs of these diseases, the organism that causes the disease, the conditions suitable for the spread of the disease, the life cycle of the pathogen, and the most important methods of resistance.

9. Strategies education And learning	
The strategy	1. Focusing on the most important diseases that affect vegetable crops and ornamental plants and ways to combat them environmentally: Real-life examples: Using real-life examples and case studies in the field of diseases that affect vegetable crops and ornamental plants To clarify the effects of pathogens on plants. 2- Field visits: Organizing field visits to field And research centers (greenhouses) orchards Agricultural education to introduce students to practical applications. Electronic learning resources: Providing electronic learning resources, such as videos and interactive exercises, 3. Active learning:

Group Discussions: Encourage students to discuss and solve problems together. 4. Continuous evaluation: Assignments and tests: Assess students' understanding of concepts and diseases that affect vegetable crops and ornamental plants through assignments and tests. 5. Linking vegetable pathology to other courses	

10. The decision structure

the week	hours	Outputs Learning required	name Unit or the topic	road Learning	road Evaluation
1	5	Students understand them Diseases that widely affect vegetable and ornamental plants.	Introduction to the most important diseases that affect vegetable and ornamental plants.	Lectures	Daily paper exam
2	5	Providing students with models, slides, and pictures of diseases of the Solanaceae family: diseases of tomato and potatoes in open and protected agriculture, along with field visits.	Diseases of the Solanaceae family: diseases of tomato and potatoes in open and protected cultivation and methods of combating and reducing them.	Lectures with Laboratory practical application	Daily paper exam
3	5	Identify the most important environmental factors that play a role in the distribution of	Open and protected diseases of eggplant, pepper, and tobacco, and methods of controlling	Lectures	Practical tests

		and reducing . them	insects in .nature		
practical test	Lectures Video	The most important diseases that affect cucurbits in protected agriculture and their control and reduction	Identifying the most important models, slides, and pictures of exposed and protected diseases of eggplant, pepper, and tobacco, with . field visits	5	4
practical test		First test	First test	5	5
practical test	Lectures with field observations	The most important diseases that affect plants of the Cruciferous family and ways to combat and reduce them .	Identify the most important diseases Cruciferous family plants through signs and the most important methods of combating . them	5	6
practical test	Lectures Video	The most important diseases that affect plants of the Compositae family and ways to combat and reduce them .	Providing students with models, slides, and pictures of the most important diseases that affect plants of the Compositae family, along with field visits	5	7
practical test	Lectures Video	The most important diseases that affect plants of the	Providing students with models, slides, and pictures of the most	5	8

		leguminous family and ways to combat and reduce them	important diseases that affect plants of the legume family, along with field . visits		
practical test		Second test	Second test	5	9
practical test	Field and practical observations	The most important diseases that affect plants of the Narcissi family and ways to combat and reduce them .	Introducing students to their importance Diseases that affect plants of the Narcissi family through models, slides, and pictures, along with . field visits	5	10
practical test	Practical views	The most important diseases that affect plants of the mallow family and ways to combat and reduce them .	Providing students with models, slides, and pictures of the most important diseases that affect plants of the mallow family, along with field . visits	5	11
practical test	Lectures Field with observations	The most important diseases that affect ornamental plants (Part One) and ways to combat and reduce them .	Distinguish the most important diseases of ornamental .plants	5	12
practical test	Practical views	The most important diseases that affect	Learn about estimating damage and losses	5	13

		ornamental plants (Part Two) and ways to combat and reduce them .	resulting from injuries to ornamental .plants		
practical test	Lectures with practical and laboratory application	The most important nursery diseases and ways to control and reduce them .	Identify the causes of various nursery diseases and the most important modern methods for controlling and reducing disease .causes	5	14
practical test		Third test	Third test	5	15

evaluation The decision .11	
Theoretical semester exams (30%) - Practical semester exams (15%) - Daily practical exams (5%) - Practical final exam (20%) - Theoretical .(30%) final exam	
	Sources Learning .12 And teaching
and Academic Press, Agrios , Plant pathology 19 - 1 the book of diseases of horticultural plants	Books decided Required (methodology that (Found
Book: Practical guide to vegetable diseases -2 and protected agriculture Diseases of greenhouse plants Vegetable diseases book (Muhammad Ayoub)	the reviewer Home ((Sources
Plant Pathology Journal -3	Books And references Prevailing that recommend With it (Magazines (.... Reports ,scientific

https://www.agro-lib.site/2022/04/blog-post_102.html https://www.noor-book.com/%D9%83%D8%AA%D8%A8-%D9%81%D9%84%D9%8A%D8%AA%D8%B4%D8%B1-pdf	**Electronic references, websites**