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



Academic Program and Course Description Guide

Introduction:

The educational program is a coordinated and organized package of courses that include procedures and experiences organized in the form of academic vocabulary whose main purpose is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market, which is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that are being worked on to acquire for students based on the objectives of the academic program, and the importance of this description is evident because it represents the cornerstone in obtaining program accreditation and is written jointly by the teaching staff under the supervision of the scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the developments 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 description of the academic program circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna track as the basis for their work.

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

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Concepts and terminology:

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

<u>Course Description</u>: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It is derived from the description of the program.

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

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

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

<u>Curriculum Structure</u>: All courses / subjects included in the academic program according to the approved learning system (semester, yearly, Bologna track) whether it is a requirement (ministry, university, college and scientific department) with the number of study units.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by the student 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.

<u>Teaching and learning strategies</u>: They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. Describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: Al Muthanna University Faculty/Institute: Faculty of Agriculture Scientific Department: Field Crops Department Academic or Professional Program Name: Bachelor of Agricultural Sciences Final Certificate Name Bachelor of Science in Agriculture \ Field Crops Academic System: Courses Description Preparation Date: 1/9/2023 File Completion Date: 1/9/2023

Signature

Head of Department Name: Prof. Hano**a**n Nahi Kazem Date :

Signature

Scientific Associate Name: Prof. Shaima Ibrahim Mahmoud Date:

The file is checked by: Saad Kadhim Jabbar

Department of Quality Assurance and University Performance Director of the Quality Assurance and University Performance Department: Date: 4/342024

Signature:

pproval of the Dean

1. **Program Vision**

Achieving the mission of Al–Muthanna University towards excellence and creativity in teaching, scientific research and community service in the agricultural fields within the framework of scientific, cultural, ethical and social principles and values, and that the college has the ways and tools of leadership in the development and development of agricultural areas within the geographical reality of the university.

2. Program Mission

Providing an applied academic climate that pushes the student to learn and develop his abilities and culture through the self-learning curriculum, which involves the student's acquisition of educational and research skills within the modern knowledge system in various agricultural disciplines, the ability to innovate, self-education and competition in the labor market, and provide opportunities to enhance the participation of faculty members, researchers and experts with their abilities to provide society with scientific cadres capable of meeting the needs of the labor market and agricultural and environmental development while providing opportunities to provide consultations and implement studies in a way that contributes to Economic and social development of the country.

3. Program Objectives

• Developing students' knowledge by mixing theoretical and applied studies and training to graduate effective specialists to advance the national agricultural sector while qualifying graduate students.

• Developing the scientific programs of the college in the light of contemporary scientific trends, as well as paying attention to self-education and continuing education.

• Preparing qualified graduates who are able to contribute to public projects and their own projects, agricultural project management, extension

and agricultural education through the experiences and cognitive and mental skills they acquire in the college and the ability to implement agricultural research.

• Establishing and implementing research plans to solve current agricultural problems in line with scientific developments, environmental protection and community service.

• Developing current and future courses periodically and taking into account the progress made in the field of research and academia and international quality requirements.

• Developing an education and scientific research strategy to meet the needs of the surrounding environment, labor market and society.

• Strengthening and developing the infrastructure and institutional by providing it with everything new in the fields of specialization to achieve the objectives of the college .

• Emphasizing quality programs to raise and improve performance rates and skills in education, research, community service and environmental development.

• Seeking to reach the college's programs to academic accreditation .

4. Program Accreditation

Does the program have program accreditation? And from which side? No

5. Other external influences

Is there a sponsor for the program?

AI, Muthanna University

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6. Program Structure													
Program Structure	Number of	Credit hours	Percentage	Reviews*									
	Courses												
Institution	19	%13.01	%15-10										
Requirements													
College Requirements	28	19.17%	%22-16										
Department	99	%67.8	%74-63										
Requirements													
Summer Training													
Other	146												

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

Program Description

			First st	stage							
	Sprii	ng semester			Autu	mn semester					
Practic	Theoretica	symbol	Material	Practic	Theoret	Course	Material				
al	1	Rapporteu	Name	al	ical	Code	Name				
		r									
3	2	0C24011	Biochemistry	3	2	0C14011	Organic				
							Chemistry				
3	2	0024102	Fundamental	3	2	0014102	General				
			s of field				plant				
			crops								
3	2	0024103	Soil Basics	3	2	0C14013	Surveying				
3	2	0C24104	Agricultural		2	0C14014	Mathematic				
2		0C24105		2	2	0014015	S Duin ain lag of				
3		0C24105	Engineering	3	2	0C14015	Principles of				
			urawing				Animai				
	1	U024016	English		1	U01/016	Humon				
	1	0024010	Language 2		1	0014010	Rights				
	1	U024017	Arabic	3		U014017	Computer1				
	-		language	č			- ompator i				
3		U024018	Computer		1	U014018	English				
			applications2				Language 1				

			Second	d stage								
	Autun	ın semester			Autum	semester						
Practica l	Theoretica l	symbol Rapporteu r	Material Name	Practica l	Theoretica l	Course Code	Material Name					
3	2	0C24201	Farms Management		2	0C1402 1	Agricultural extension					
3	2	0024202	Oil and sugar crops	3	2	0C1420 2	Plant ecology					
3	2	0C24203	Principles of Statistics	3	2	0C1420 3	Microbiolog y					
3	2	0C24204	Machinery & Equipment	3	2	0C1420 4	Soil fertility and fertilizers					
3	2	0C24205	Irrigation and Drainage	3	2	0C1420 5	Principles of Food Industries					
3	2	0C24206	Plant classification									
	1	U024027	English Language 2	3	2	0C1420 6	Gardening principles					
	1	U024028	Computer2		1	U01402 7	Computer1					

7

	1	U024029	Baath		1	U01402	English
			crimes			8	Language 1
	1		Third st	tage			
	Spri	ng semester			Autumn	semester	
Practica	Theoretica	symbol	Material	Practica	Theoretica	Course	Material
1	1	Rannorteu	Namo	1	1	Code	Name
•		Kapporteu	I vanite		1	Couc	Itallic
		ľ					
2	2	0024201	Deckeening	2	2	0014201	Comonal
3	2	0024301	веекееріпд	3	2	0014301	General
							inheritance
3	2	0024302	Mechanizatio	3	2	0014302	Design and
			n of field				analysis of
			crops				experiment
			-				S
3	2	0024303	Cereal crops	3	2	0014303	Insects of
			1				field crops
3	2	0024304	Crop	3	2	0014304	Land
			diseases				reclamatio
							n
				3	2	0014305	Legume
				_			crops
3	2	0024305	Seed	3	2	0014306	Fodder
-			technology	_			crops
	1	U024036	English	3	2	0014307	Fiber crops
	-	2021000	Language 2	2	_		
					1	U01403	English
						8	Language 1

			Fourth s	tage			
	Sprin	g semester			Autum	n semester	
Practica l	Theoretica l	symbol Rapporteu r	Material Name	Practic al	Theoretica l	Course Code	Material Name
3	2	0024401	Breeding and calculating plants	3	2	001440 1	Medicinal plants
3	2	0024402	Growth Regulators	3	2	001440 2	Plant physiology
3	2	0024403	Weed control	3	2	001440 3	Biology of Weeds
3	2	0024404	Pasture Managemen t	3	2	001440 4	Field crop management
3	2	U024045	English Language 2	3	2	001440 5	Pasture Managemen t
3	2	0024406	Crop quality	3	2	001440 6	Molecular heredity
	1	0C14047	Research Project	3	2	001440 7	Land farming
					1	0C1404	Seminars

			8	
		1	0C1404	Research
			9	Project

1. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes Statement 1	Learning Outcomes 1
Skills	
Learning Outcomes Statement 2	Learning Outcomes 2
Learning Outcomes Statement 3	Learning Outcomes 3
Values	
Learning Outcomes Statement 4	Learning Outcomes 4
Learning Outcomes Statement 5	Learning Outcomes 5

Teaching and Learning Strategies

Teaching and learning methods

- Teaching students how to do methods of thinking and objective analysis
- Providing students with the basics of the course and additional topics
- Asking intellectual questions
- Dividing students into groups in practical lessons

3. Evaluation methods

- Practical training for each course

- Developing the creative thinking of students and the individual
- Knowing the developments that occur and have an impact on the course

material

1. Faculty					
Faculty Member	Ś				
Academic Rank	Specializatio	n	Special Requirements/ Skills (if applicable)	Number of the te	aching
	General	Special		Staff Leo	turer
Prof. Shaima Ibrahim Mahmoud	Field crops	Physiology of crops		Yes	
Prof. Faisal Mahbas Madloul	Field crops	Crop production		Yes	
Prof. Mohamed Radwan Mahmoud	Field crops	Environmental stress		Yes	
Assoc. Prof. Ali Halil Naima	Field crops	Crop production technology		Yes	
Assoc. Prof. Ali Rahim Karim	Field crops	Crop production		Yes	
Assoc. Prof. Haider Razzaq Luaibi	Field crops	Crop production		Yes	
Assoc. Prof. Nasser Habib Muhaibis	Field crops	Plant nutrition		Yes	
Assoc. Prof. Mohamed Hussein Nour	Field crops	Heredity and plant breeding		Yes	
Assoc. Prof. Haider Abdul Hussain Mugheer	Field crops	Crop production		Yes	
Assoc. Prof. Ragheb Hadi Ajami	Field crops	Crop production		Yes	
Assoc. Prof. Haidar Abdel Moneim Al- Ibrahimi	Field crops	Crop production		Yes	
Dr. Esraa Rahi Sayhoud	Field crops	Crop production		Yes	
M.M. Hasan Abbas Fazil	Field crops			Yes	
M.M. Hossein Farhoud	Field crops			Yes	

Acceptance Criterion

- Central admission for morning studies
- direct application for evening studies according to the average and competition

The most important sources of information about the program

From methodological books, help books, the Internet and scientific research

2. Program Development Plan

1– Teamwork: Work within the group effectively and actively.

2- Time management: Manage time effectively and set priorities with the ability to work organized by appointments.

- 3– Leadership: the ability to guide and motivate others.
- 4- Independence at work.

5– Negotiation and persuasion (the student is able to influence and convince others to discuss and reach an agreement).

6– Global skills (the student is able to speak and understand other languages and appreciate other cultures).

			F	rogram	Skill	s Out	line								
							Req	uired	progr	am L	earnin	g outco	mes		
Year/Level	Course Code	Course Name	Basic or	Knov	wledge			Skill	s			Ethics			
			optional	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
FIRST STAGE	0C14011	organic chemistry	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014102	General plant	Basic	~	~	~	~	~	~	~	v	~	~	v	v
	0C14013	Surveying	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14014	mathematics	Basic	~	~	~	~	~	~	~	~	v	v	v	v
	0C14015	Principles of animal production	Basic	~	•	~	~	~	~	~	~	~	~	~	~
	U014016	human rights	Basic	~	~	~	~	~	~	~	~	~	v	v	v
	U014017	Computer1	Basic	~	~	~	~	~	~	~	~	~	v	v	v
	U014018	English language 1	Basic	~	~	~	~	~	•	~	~	~	~	~	~
FIRST STAGE	0C24011	Biochemistry	Basic	~	~	~	~	~	~	~	~	~	~	~	~
ning .	0024102	Basics of field crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024103	Soil basics	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C24104	agricultural economy	Basic	~	~	~	~	~	~	~	~	~	~	~	~

	0C24105	Engineering Drawing	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U024016	English language 2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U024017	Arabic Language	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U024018	Computer 2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Second stage	0C14021	Agricultural guidance	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Autumn	0C14202	Plant environment	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14203	Microbiology	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14204	Soil fertility and fertilizers	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14205	Principles of food industries	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14206	Gardening principles	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U014027	Computer1	Basic	~	~	~	~	~	~	~	~	~	~	~	 ✓
Second stage	0C24201	Farm management	Basic	~	~	~	~	~	~	~	~	~	~	~	 ✓
spring	0024202	Oil and sugar crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C24203	Principles of statistics	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C24204	Machines and equipment	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C24205	Irrigation andDrainage	Basic	~	~	~	~	~	~	~	~	~	~	~	~

	0C24206	Plant classification	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U024027	English language 2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U024028	Computer2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Third stage	0014301	General heredity	Basic	~	~	~	~	~	~	~	~	~	~	~	~
autumn	0014302	Design and analysis of experiments	Basic	~	~	~	~	~	~	~	~	•	•	~	~
	0014303	Field crop insects	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014304	Land reclamation	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014305	Legume crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014306	Fodder crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014307	Fiber crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	U014038	English language 1	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Third stage	0024301	Beekeeping	Basic	~	~	~	~	~	~	~	~	~	~	~	~
spring	0024302	Mechanization of field crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024303	Cereal crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024304	Crop diseases	Basic	~	~	~	~	~	~	~	~	~	~	~	~

	0024305	Seed technology	Basic	~	~	~	~	~	•	~	~	~	~	~	~
	U024036	English language 2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024307	Beekeeping	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Fourth stage	0014401	Medicinal plants	Basic	~	~	~	~	~	~	~	~	~	~	~	~
autumn	0014402	Phosphorus is a plant	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014403	Jungle life	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014404	Field crop management	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014405	Pasture management	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014406	Molecular inheritance	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0014407	Land cultivation	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0C14048	Seminars	Basic	~	~	~	~	~	~	~	~	~	~	~	~
Fourth stage	0024401	Breeding and cultivation of plants	Basic	~	~	•	~	~	~	~	~	~	~	~	~
spring	0024402	Growth regulators	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024403	Combating jungles	Basic	~	~	~	~	~	~	~	~	~	~	~	~
	0024404	Pasture management	Basic	~	~	~	~	~	~	~	~	~	~	~	~

U024045	English language 2	Basic	~	~	~	~	~	~	~	~	~	~	~	~
0024406	Quality of crops	Basic	~	~	~	~	~	~	~	~	~	~	~	~
0C14047	research project	Basic	~	~	~	~	>	~	>	~	~	~	~	~

	Course I	Descrij	ption For	n			
1. Course T	Course Title:						
English Language 1							
2. Course C	ode						
		U014	4108				
3. Semester	/ Year						
First / autumn							
4. The history of preparation of this description							
		202	24				
5. Available	Attendance Forms						
			Came				
6. Number of	of Credit Hours (Tota	al) / Num	ber of Units	(Total)			
2 hours the excited number of write 2							
2 nours theoretical number of units 2							
Name: Lecture DR Mohamed Abdulridha Nasser							
Email: mohammed naser@mu.edu.ig							
	<u> </u>	·					
8. Course C	bjectives						
Teaching the s	tudent the basics	of the	Course Obje	ectives:			
English language	9						
9. Teaching	and Learning Strate	egies					
Explanation and	clarification, lecture	method			St	rategy	
10. Course Stru	ucture						
Evaluation	Learning method	Unit or	subject	Required	Hour	The	
method		name		Learning	S	wee	
				Outcomes		k	
Rapid exam	Lecture	Fundar	nentals of	Theoretical	2	1	
		English	l	lecture			
Rapid exam	Lecture	Pronou	ns	Theoretical	2	2	
				lecture			
Rapid exam	Lecture	Pronou	ns	Theoretical	2	3	
Rapid exam	Lecture	re Auxiliary verbs Theoretical				4	

				lecture		
First month	Theoretical exam	examination		examinatio	2	5
exam				n		
Rapid exam	Lecture	Rules of verbs		Theoretical	2	6
				lecture		
Rapid exam	Lecture	Rules of verbs		Theoretical	2	7
				lecture		
Rapid exam	Lecture	Rules of nouns		Theoretical	2	8
				lecture		
Rapid exam	Lecture	Rules of nouns		Theoretical	2	9
				lecture		
Second month	Theoretical exam	examination		examinatio	2	10
exam						
Rapid exam	Lecture	Rules of adjectives		Theoretical	2	11
				lecture		
Rapid exam	Lecture	Rules of adjectives		Theoretical	2	12
				lecture		
Rapid exam	Lecture	Auxiliary verbs		Theoretical	2	13
				lecture		
Rapid exam	Lecture	Auxiliary verbs	Auxiliary verbs		2	14
				lecture		
Rapid exam	Lecture	Auxiliary verbs		Theoretical	2	15
				lecture		
1. Course Eva	luation	l			1	1
Distributing the s	core out of 100 acc	ording to the tas	ks as	signed to the	student	such
as daily preparat	ion, daily, oral, mon	thly, written exan	ns, rej	ports etc		
2. Learning ar	nd Teaching Resource	ces				
Writing Academic	c English, Level 1 b	y	Required textbooks (methodole			hodolo
Alice Oshima			if an	у)		
			Main references (sources))
			Reco	ommended	books	and
			refer	ences (scien	tific jou	rnals,
			reports)			
https://www.ef.c	om/wwar/blog/langu	age/dystopian-	Elec	tronic Referer	nces, W	ebsites
books-to-learn-	english/					
L	,		I			

Course Description F	Form
Course Title:	
General plan	ıt
Course Code	
0014102	
Semester / First Year	
First / autum	n
Date of preparation of this description:	
2023-2024	
Number of Credit Hours (Total) / Number of Units (To	otal)
Number of credit hours (total) 75 hours	
Course Administrator Name:	
Name: A.M.D.Haidar Razak Luaibi Email: haiderreza	aq2017@mu.edu.iq
Course Objectives	
Increasing the student's ability to work in the ag sector in the field crops specialization through his kr of botany and its various branches (phenotypicology, classification science, cell physiology) and know the exact cellular structure of a plant cell to the progra	griculti nowledption provides a brief summal characteristics of the course scieromes expected of the studer of whether he has made the mo ing opportunities. It must be li m description.
Teaching and Learning Strategies	
Leaching and learning methods	Strategy
1- Explanation and clarification	
2- Lecture method	
3- Student groups-	
4- Practical lessons in laborate	ories

Course Structu	ure				
Evaluation	Practical	Unit or subject name	Required	Hours	The
method			Learning		week
			Outcomes		
Discussions	Microscope	Departments of		2 hours	First
Exams		Botany		theoretical	week
				3 hours	
				practical	
Discussions	Preparation	The importance of		2 hours	Seco
Exams	of permanent	plants in nature and		theoretical	nd
	and	human life		3 hours	week
	temporary			practical	
	plant slides				
Discussions	Plant cell and	Types of inorganic		2 hours	Third
Exams	its	and organic		theoretical	week
	components	compounds in plants		3 hours	
				practical	
Discussions	Cell division	Plant cell		2 hours	Fourt
Exams				theoretical	h
				3 hours	week
				practical	
Discussions	Plant tissue	Plant cell division		2 hours	Fifth
Exams				theoretical	week
				3 hours	
				practical	
Discussions		First month exam		2 hours	Week
Exams				theoretical	Six
				3 hours	
				practical	
Discussions	The radical	Nutrients stored in		2 hours	Week
Exams	total and its	seeds, seed parts,		theoretical	seve
	most			3 hours	n
	important			practical	
	mutations				

Discussions	Vegetative	Seed germination	2 hours W	Veek
Exams	system		theoretical ei	ight
	(stem)		3 hours	
			practical	
Discussions	Plant leaves	Germination	2 hours W	Veek
Exams	and their	conditions	theoretical N	line
	most		3 hours	
	important		practical	
	types and			
	mutations			
Discussions	Flowers	The vegetative body	2 hours W	Veek
Exams		of a seed plant	theoretical T	en
			3 hours	
			practical	
Discussions	Fruits and	Plant tissues	2 hours W	Veek
Exams	seeds		theoretical E	leve
			3 hours n	
			practical	
Discussions		Morphological study	2 hours T	welf
Exams			theoretical th	۱
			3 hours w	/eek
			practical	
Discussions		Anatomical of plant	2 hours T	hirte
Exams		organs	theoretical en	nth
			3 hours w	/eek
			practical	
Discussions			2 hours F	ourt
Exams			theoretical e	enth
			3 hours w	/eek
			practical	
		Second month exam	N	Veek
			V	,
			te	en

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports etc

Learning and Teaching Resources	
General plant . Written by Dr	Required textbooks (methodology, if any)
Zionist leopard. Faculty of	
Agriculture II Badlib. 2009 CE	
From methodological books,	Main references (sources)
auxiliary books, the Internet	
and scientific research	
Scientific journals in the main	Recommended books and references (scientific
specializations	journals, reports)
Al–Muthanna University e–	Electronic References, Websites
learning website	
https://agr.mu.edu.iq/	

1. Course Name: Engineering Drawing 2. Course Code: 0C14105 3. Semester / Year: 0C14105
Engineering Drawing 2. Course Code: 0C14105 3. Semester / Year:
2. Course Code: 0C14105 3. Semester / Year: 0C14105
0C14105 3. Semester / Year:
3. Semester / Year:
First / autumn
4. Description Preparation Date:
26\2\2024
5. Available Attendance Forms:
Actual presence
6. Number of Credit Hours (Total) / Number of Units (Total)
theoretical practical 2 units 1
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Professor Dr. Ahmed Merza Abood
Email :ahmedme@mu.edu.iq
8. Course Objectives
Course 1– Teaching students, the basic concepts related to access to the simple basics of a
Objectives engineering drawing for students of the College of Agriculture.
2- Development the ability of preparing engineering designs for agricultural projects,
3- Student be able to read various engineering drawings and implement them in
Reality.
Reality.
Reality.
Reality.
Reality. 9. Teaching and Learning Strategies
Reality. 9. Teaching and Learning Strategies Strategy 1-Explanation and clarification
9. Teaching and Learning Strategies Strategy 1-Explanation and clarification 2- Lecture method
9. Teaching and Learning Strategies Strategy 1-Explanation and clarification 2- Lecture method 3- Student groups

		4- Practical lessons			
		5- Scientific trips			
		6 - Self-learning method			
	e Structu	ra			
IU. Cours			11-21-2-2		E al alla
VVEEK	Hours	Required Learning Outcomes	Unit or	Learning method	Evaluatio
			subject		n method
			name		
first	2	The student gets to know the tools	1	Explanation,	the exam,
		of engineering drawing and its uses.		presentation of the	Quizzes, Reports, and
				model and lecture	activities in
					class
the second	2	The student gets to know types of	2	Explanation,	The exam, Quizzes.
		lines and dimensions		presentation of the	Reports, and
				model and lecture	activities in
	2		2	– – – – –	class
the third	2	The student gets to know the	3	Explanation,	Quizzes,
		curves.		presentation of the	Reports, and
				model and lecture	activities in class
the fourth	2	Student able to recognize the ellipse	4	Explanation,	The exam,
				presentation of the	Quizzes, Bonorts and
				model and lecture	activities in
					class
Fifth	2	Student able to recognize sections in	5	Explanation,	the exam,
		engineering drawing		presentation of the	Reports, and
				model and lecture	activities in
0 1 /1					class
Sixth	2	The student will be familiar with the	6	Explanation,	Quizzes,
		vertical projection of points, straight		presentation of the	Reports, and
		lines, and flat surfaces		model and lecture	activities in
Seventh	2	The student will be familiar with the	7	Explanation	the exam,
Oeventin	2	vertical projection of points, straight	/	Explanation,	Quizzes,
		vertical projection of points, straight		presentation of the	Reports, and
		lines, and flat surfaces		model and lecture	class
Eighth	2	student will know the complete	8	Explanation,	The exam,
-		sections		presentation of the	Quizzes,
				model and locture	activities in
					class
Ninth	2	student will recognize the semi-	9	Explanation,	the exam,
					Quizzes,

_				
	section area		presentation of the	
				activities in
			model and lecture	class

tenth	2	The st	udent gets to know the sector	10	Explanation,	the exam,	
		paralle	I to the basic levels and its		presentation of the	Quizzes, Reports, and	
		applica	ations		model and lecture	activities in	
Fleventh	2	For the	a student to become familiar	11	Explanation	class The exam,	
	2	1 OF UR		11	procentation of the	Quizzes,	
		withe				Reports, and activities in	
		section	and the semi-section		model and lecture	class	
Twelfth	2	Studer	nt becomes familiar with	12	Explanation,	the exam, Quizzes	
		three-	dimensional drawing and its		presentation of the	Reports, and	
		conditi	ons		model and lecture	activities in class	
Thirteenth	2	Studer	nt becomes familiar with the	13	Explanation,	The exam,	
		solid d	rawing of three-dimensional		presentation of the	Quizzes, Reports, and	
		drawin	drawing.		model and lecture	activities in class	
fourteenth	2	studen	t gets to know the isometric	14	Explanation,	the exam,	
		drawin	g.		presentation of the	Quizzes, Reports, and	
					model and lecture	activities in	
Fifteenth	2	Studer	nt becomes familiar with	15	Explanation,	The exam,	
		drawin	g parallel surfaces.		presentation of the	Quizzes, Reports and	
					model and lecture	activities in	
	o Evoluat	ion				class	
1 Monthly		.1011	20				
2 - Daily to	itois ete		50				
2 Daily tes	ities and	attenda	10 10				
12. Learni	ing and T	eaching					
Required te	extbooks	curricul	Engineering drawing for studer	nts of the Co	ollege of Agriculture	Dr. Eng.	
books, if ar	ıy)	(Natio Sabri – University of Mosul 1995)				
Main refere	nces (sou	urces)	Engineering drawing (Professo	r Abdul Ras	ul Al-Khafaf - Unive	ersity of	
	``	,	Technology 1990)				
Recommen	ded book	s and	Engineering drawing books for	all enginee	ring disciplines – Al I	Noor Library	
references	(scientific	:					
journals, re	ports…)						

Electronic References,	
Websites	IVUST

1. Course Title:				
Organic Chemistry				
2. Course Code				
0C14011				
3. Semester / Year :				
First / autumn				
4. Date of preparation of this description:				
2023-2024				
5. Number of Credit Hours (Total) / Number of Units (Total)				
Number of credit hours (total) 75 hours				
6. Course Administrator Name:				
Name: A. d.Mohamed Radwan Mahmoud Email : mo	drn@mu.	edu		
Course Objectives				
1- Providing students with general information focourse Objectives				
analytical chemistry This course description	n provides	a b		
2. Introduce students to ways and types of expressionary of the	most in	nport		
concentrations characteristics of the concentrations				
3. Introducing students to strong and weak acids bedlearning outcomes				
bases student to achieve are	proof of v	whet		
4- Clarifying to students what is BFR solutions and has imade the mos	t of the a	vaila		
types with examples learning opportunities.	It must be	e linl		
5- Introducing students to the definition of salts tanthe program descrip	tion.			
their types with theoretical examples				
Teaching and Learning Strategies				
Teaching and learning methods	Strategy			
1- 1 Explanation and clarification-				
2- Lecture method				
3- Student groups-				
4- Practical lessons in laboratories				
4- Fractical lessons in laboratories				

Course Structure					
Evaluation	Practical	Unit or subject	Required	Hours	The
method		name	Learning		week
			Outcome		
			s		
Discussions	Experiment	1 Introduction to		2 hours	First
Exams	No. 1	organic chemistry		theoretical	week
	Preparation	and its importance,		3 hours	
	of alkyl	chemical bonds,		practical	
	cyclic	bases and acids			
Discussions	Experiment	2 Active		2 hours	Secon
Exams	No. 2	aggregates,		theoretical	d
	Preparation	saturated		3 hours	week
	of alkyl	hydrocarbons,		practical	
	halide	introduction,			
		general law,			
		nomenclature			
		according to the			
		lupAc system			
		Physical properties.			
		Its reactions			
Discussions	Experiment	3 Unsaturated		2 hours	Third
Exams	number 3	hydrocarbons		theoretical	week
	Preparation	(alkenes,		3 hours	
	of alcohol	introduction,		practical	
		general law, lupAc			
		nomenclature			
		Physical properties.			
		Its interactions			
Discussions	Experiment	4 Unsaturated		2 hours	Fourth
Exams	number 4	hydrocarbons		theoretical	week
	Acetone	Alkynes,		3 hours	
	preparation	introduction,		practical	
		general law,			
		designation			

		according to the		
		lupAc system		
		Physical properties.		
		Its interactions		
Discussions	Experiment	5 First month exam	2 hours	Fifth
Exams	No. 5 Study		theoretical	week
	of the		3 hours	
	properties of		practical	
	acetone			
Discussions	Experiment	6 Alcohols,	2 hours	Week
Exams	No. 6 Study	introduction,	theoretical	Six
	of the	common law,	3 hours	
	properties of	nomenclature	practical	
	aldehydes	according to the		
		lupAc system		
		Physical properties		
		. Their interactions		
Discussions	Experiment	7 Ethers,	2 hours	Week
Exams	No. 7 Study	introduction,	theoretical	seven
	of the	general law,	3 hours	
	properties of	naming according	practical	
	ketones	to the lupAc		
		system Physical		
		properties. Its		
		interactions		
Discussions	Experiment	8 Aldehydes,	2 hours	Week
Exams	number 8	introduction,	theoretical	eight
	Preparation	nomenclature	3 hours	
	of carboxylic	according to the	practical	
	acid	lupAc system		
		Physical properties		
		. Its interactions		
Discussions	Experiment	9 Ketones,	2 hours	Week
Exams	No. 9	introduction,	theoretical	Nine
	Aspirin	nomenclature	3 hours	

	preparation	according to the		practical	
		lupAc system			
		Physical properties			
		. Their interactions			
Discussions	Experiment	10 Distinguish		2 hours	Week
Exams	No. 10	between aldehydes		theoretical	Ten
	Carbon	and ketones		3 hours	
	Detection			practical	
Discussions	Experiment	11 Carboxylic acids		2 hours	Week
Exams	No. 11	and their		theoretical	Eleven
	Classificatio	derivatives		3 hours	
	n of oils and	reactions		practical	
	fats				
Discussions	Experiment	12 Second Month		2 hours	Twelft
Exams	No. 12	Exam		theoretical	h
	Calculation			3 hours	week
	of oils and			practical	
	fats				
Discussions	Preparation	13 Updated Identify		2 hours	Thirtee
Exams	of vegetable	the importance of		theoretical	nth
	organic	organic fertilizers		3 hours	week
	fertilizers			practical	
Discussions	Preparation	14 Updated Linking		2 hours	Fourte
Exams	of animal	organic materials to		theoretical	enth
	organic	improve yield		3 hours	week
	fertilizers	productivity		practical	
	Decompositi	15 Updated organic			Week
	on of plant	matter			V
	and animal	decomposition			ten
	organic				
	fertilizers				
. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such					

as daily preparation, daily, oral, monthly, written exams, reports \dots etc

Learning and Teaching Resources			
	Required textbooks (methodology, if any)		
From methodological books, auxiliary books, the	Main references (sources)		
Internet and scientific research			
Scientific journals in the main	Recommended books and references		
specializations	(scientific journals, reports)		
Al-Muthanna University e-learning	Electronic References, Websites		
website			
https://agr.mu.edu.iq/			

1. Cour	1. Course Title:					
	mathematics					
2. Cour	se Code					
	0C1	4014				
3. Seme	ester / Year					
	Autum	n / First				
4. Date	of preparation of this description:					
	2023	3-2024				
5. Num	per of Credit Hours (Total) / Number	of Units (Total)				
Num	per of credit hours (total) 30 hours					
6. Cour	se Administrator Name:					
Nam	e: Prof. Mohamed Radwan Mahmo	ud Email: modrn	@mu.edu.	iq		
7. Cour	se Objectives					
Enable	Enable the student to learn about Course Objectives					
mathem	mathematics in general and its applications This course description provides					
in variou	us experiments	summary of the	most in	nport		
– Ena	ble the student to know and	characteristics of the cou	rse			
understa	and mathematics and perform the	The learning outcomes	expected	of		
steps o	correctly and properly in solving	student to achieve are p	roof of whe	ether		
mathem	atical problems	has made the most	of the a	vaila		
– Provi	ding the student with the skills of	learning opportunities. It	must be li	nkec		
dealing	dealing with different departments of the program description.					
mathem	mathematics and the different use of					
mathem	mathematical applications					
– Enabl	 Enable the student to solve complex proble 					
and various applications in various fields.						
Teachin	g and Learning Strategies					
Teachi	ng and learning methods		Strategy			
11						

Audio methods (teaching explanation of the subject) style of writing on the board The method of direct dialogue between the teacher and the student with the evaluation of the student in classroom participations

9. Course Stru	ucture				
Evaluation	Learning	Unit or subject	Required	Hours	The
method	method	name	Learning		week
			Outcomes		
Discussions		Categories and		2	First
Exams		functions		hours	week
Discussions		Mathematical		2	Second
Exams		deduction and		hours	week
		binomial theorem			
Discussions		Partial fractions		2	Third
Exams				hours	week
Discussions		Matrices and		2	Fourth
Exams		determinants		hours	week
Discussions		Solving the		2	Fifth
Exams		Simultaneous		hours	week
		Equation Using			
		Matrices			
Discussions		Kramer Rule		2	Week
Exams				hours	Six
Discussions		Coordinates		2	Week
Exams				hours	seven
Discussions		Equation of a		2	Week
Exams		Straight Line in		hours	eight

		Different	Forms			
Discussions		Circl	e		2	Week
Exams					hours	Nine
Discussions		Parabola		2	Week	
Exams					hours	Ten
Discussions		Ellips	se		2	Week
Exams					hours	Eleven
Discussions		Hypert	oola		2	Twelfth
Exams					hours	week
Discussions		13 Update	d rules		2	Thirteent
Exams		of hardship	and		hours	h week
		tangent				
Discussions		14 Update	d		2	Fourtee
Exams		linking			hours	nth
		mathematio	cs to			week
		statistics				
		Second mo	onth exan			Week
						V
						ten
10. Course Eva	luation					
Distributing	the score ou	ut of 100 ac	cording to	o the tasks as	signed to t	he student
such as dai	ily preparatio	n, daily, oral	, monthly	, written exam	s, reports .	etc
11. Learning ar	nd Teaching	Resources	1			
Principles	of Mathema	tics –	Required textbooks (methodology, if any)			
Fundamentals	of Mathemati	cs – Basic				
Rules of C	Calculus Elec	tronic				
References, Websites		es				
		Main references (sources)				
Iraqi -reviewed	journals		Recommended books and references			references
/https://www.els	sevier.com		(scientific journals, reports)			
https://mathblog	g.com/mathe	matics-	Electron	ic References,	Websites	
books	books					

1. Cours	e Name:							
surveying								
2. Cours	e Code:							
	0C14	4103						
3. Seme	ester / Year:							
	Autumr	n / first						
4. Desci	iption Preparation Date:							
5. Availa	able Attendance Forms:							
6. Numb	er of Credit Hours (Total) / Number of	of Units (Total)						
	7	5 hours						
7. Cours	e administrator's name (mention all, i	f more than one	e name)					
Name	e: Flaieh Hammed kassar							
Email	: flaiehkassar@mu.edu.iq							
8. Cours	e Objectives							
Course Obje	ctives	•	The general objective: To					
			introduce the student to the					
			general principles of					
			surveying and its					
			applications in the					
			agricultural field.					
		•						
		•	The special objective					
			enables the student to					
			conduct surveys, make					
	maps, calculate areas and							
0 Teach	ning and Learning Strategies							
Strategy	The strategies for a course on soil-	nlant-water into	aractions often involve a					
Judicyy	combination of theoretical knowledge, practical applications, and field							
combination of theoretical knowledge, practical applications, and held								
	experiences							
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10. Co	10. Course Structure							
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method			
1	3		Definition of the survey / types of surveys / requirements of a good survey / the importance of space in agricultural work	lecture	Examination			
2	3		Measurement systems / units of measurement / errors and mistakes.	lecture	Examination			
3	3		Survey by tape / station selection conditions / field book order.	lecture	Examination			
4	3		Mistakes in the survey work / ways to avoid and overcome.	lecture	Examination			
5	3		Scale of the drawing / t/ types / determinants.	lecture	Examination			
6	3		Areas / regular and irregular shapes / area coordinates.	lecture	Examination			
7	3		Applications in scale / longitudinal / schematic / scale selection methods.	lecture	Examination			
8	3		Types of settlement / phenomena of balling and refraction and treatment.	lecture	Examination			
9	3		Methods for calculating points levels and height / direct and indirect difference	lecture	Examination			
10	3		Work longitudinal sectors / definition / action steps / determine the central axis / determine the total points / scale drawing.	lecture	Examination			
11	3		Calculation of points / distance scales / drawing on graph paper / design and actual section drop.	lecture	Examination			
12	3		Finding the height of drilling and filling depth / calculation of the areas of	lecture	Examination			

					1	
			cutting and bac	kfilling / calculation of		
			the volumes of	drilling and backfilling		
			/ calculation o	f the actual size of		
			drilling and ba	ackfill / assess the		
			economics of th	e project		
13	3		Topographic m	naps / methods of	lecture	Examination
			representation.			
14	3		Contour line	method (contour)	lecture	Examination
			Definition of co	ontour line / contour		
			space / contou	r period and methods		
			of finding ther	m / determining the		
			contour period /	finding contour lines /		
			contour period	factors / contour line		
			properties / c	contour line drawing		
			methods.			
15	3		Applications and	t various issues /	lecture	Examination
			problems in the	division of land /		
			reviews.			
			Theodolite device	ce – its features / use		
			/ measuremen	t of horizontal and		
			vertical angles			
11.Co	urse Eval	uation				
Distribut	ing the s	core out of 1	00 according to t	he tasks assigned to th	ne student	such as daily
preparat	ion, daily	oral, monthly	, or written exam	s, reports etc		
12.Lea	arning and	d Teaching R	esources			
Require	d textbool	ks (curricular	books, if any)			
Main ref	erences (sources)		Surveying – Trans	lation (Fare	edoon
			Jalaluddin - Nabil	lbrahim)		
				Author John Fancock		
Recomn	nended	books an	d references			
(scientifi	c journals	, reports)				
Electron	ic Refere	nces, Website	es			

1. Course Title:							
	Fundan	nentals	of Animal Pro	duction			
2. Course Code							
		()C14015				
3. Semester / Yea	ar						
		Firs	st / autumn				
4. The history of p	preparation of this de	escripti	on				
		2	6/2/2024				
5. Available Attend	dance Forms						
			Came				
6. Number of Cree	dit Hours (Total) / N	umber	of Units (Total)			
	2 hours theoretical	and 3	hours practical	Number of unit	s 3		
7. Course adminis	strator's name (if mo	re thar	n one name)				
Name: Prof. Sr	nadel Mohammed H	albous	Email : dhelall	halboos@mu.ed	lu.iq		
8. Course Objectiv	/es						
• It aims to fa	miliarize the studen	t with	Course Objec	tives:			
the importance	of economic a	nımal					
production as w	vell as the scie	ences					
associated with it	and the relationsh	ip or					
animal production w							
9. Teaching and Le		of the	subject)		C+	ratogy	
Blackboard writin			subject		51	rategy	
The method of d	irect dialoque betwe	en the	teacher and th	ne student with t	he		
evaluation of the	ovaluation of the student in the electroom participations						
0. Course Structure							
Evaluation	Learning method	Unit c	or subiect	Required	Hours	The	
method	0	name	,	Learning		week	
				Outcomes			

Papid oxam	Locturo	Introduction to	Theoretical	2	1
Rapiù exam	Lecture		locturo	2	1
			lecture		
		and its economic			
		Importance			
Rapid exam	Lecture	Factors affecting	Theoretical	2	2
		the production	lecture		
		efficiency of farm			
		animals			
Rapid exam	Lecture	Obstacles facing	Theoretical	2	3
		livestock	lecture		
		production in Iraq			
		and ways to			
		promote them			
Rapid exam	Lecture	Milk cows, meat	Theoretical	2	4
		cows and dual-	lecture		
		purpose cows			
First month exam	Theoretical exam	examination	examination	2	5
Rapid exam	Lecture	Establishment and	Theoretical	2	6
		management of	lecture		
		the herd of sheep			
		and goats			
Rapid exam	Lecture	Buffalo, general	Theoretical	2	7
		characteristics of	lecture		
		buffalo			
Rapid exam	Lecture	Domestic birds,	Theoretical	2	8
		the economic	lecture		
		importance of			
		domestic bird			
		projects			
Rapid exam	Lecture	Nutrition & Feed	Theoretical	2	9
			lecture		
Second month	Theoretical exam	examination	examination	2	10
exam					
				1.	
Rapid exam	Lecture	Health care for	Theoretical	2	11
Rapid exam	Lecture	domestic birds	l heoretical lecture	2	

	1	1				
Rapid exam	Lecture	Genetic		Theoretical	2	12
		improvement	t in	lecture		
		poultry				
Rapid exam	Lecture	Sheep and g	joats	Theoretical	2	13
		Economic		lecture		
		importance				
Rapid exam	Lecture	Classification	n and	Theoretical	2	14
		methods of		lecture		
		classification				
Rapid exam	Lecture	Sheep breed	ling	Theoretical	2	15
				lecture		
11. Course Evaluati	on	•			- 1	I
Distributing the	score out of 100 acc	cording to the	tasks as	ssigned to th	ne studen	t such as
daily preparatior	n, daily, oral, monthly	, written exan	ns, repo	rts etc		
12. Learning and Te	eaching Resources					
mentals of Animal P	Production Dr. Zuhair	· Al–Jalili	Required textbooks (methodology, if a			
Muhammad Adel D	octor Farid Alshahw	any Talal You				
1- Production of m	nilk cattle Dr. Natiq F	lamid Al-	Main references (sources)			
Qudsi						
2- The basics of s	heep and goat produ	uction and				
breeding d. Jalal E	ilia pastor					
Dr. Zuhair Fakhri A	Al-Jalili Dr. Daeb Ish	aq Aziz				
Iraqi academic scientific journals			Recom	mended	books	and
			referen	ices (scie	entific	journals,
			reports)			
Animal Science Jo	urnal		Electro	nic Reference	ces, Web	sites

5- Course Litle:								
Human rights and public freedoms								
6- Course Code	6- Course Code							
U01	4106							
3. Semester / First Year								
Autum	n / First							
4. Date of preparation of this description : 2023	3-2024							
5. Number of Credit Hours (Total) / Number of	Units (Total)							
Number of credit hours (total) 15 hours								
6. Course Administrator Name:								
Name: Prof. Omar Rahim Jadoua	Email:							
7. Course Objectives								
1- Raising the student's awareness of the	Course Objectives							
historical development of human rights by	This course description provides a b							
explaining their development and the different	summary of the most import							
stages they have gone through until the present	characteristics of the course							
time. 2- Introducing the student to human	The learning outcomes expected of							
rights in the monotheistic religions and	student to achieve are proof of whether							
emphasizing the role of the Islamic religion,	has made the most of the available learn							
which preserved these rights in a distinctive	opportunities. It must be linked to							
way. 3- Educating the Iraqi student about his	program description.Spreading the culture							
civil, political, economic, social and cultural	human rights and educating people on							
rights. 4- The student should learn about the	which is based on practice, sinc							
role of the United Nations and its beginnings in	participation, and the development							
supporting and shaping the principles of human	their knowledge and skills consistent v							
rights and then its development and the	the internationally recognized principles							
establishment of various human rights	human rights based on the principle of ri							
organizations5. The student should be able to	and freedom for the citizen and sovereig							
know the rights and freedoms stipulated in the	for the people. By knowing what these rig							
Iraqi Constitution of 2005. 6. The student	are, their roots and content, and identify							
should be able to defend his rights after owning	their forms and characteristics and the m							
a culture of human rights	prominent global challenges they face							

- 8. Teaching and Learning Strategies
- teaching explanation of the subject, writing style on the board The meth Sdrategy direct dialogue between the teacher and the student with the evaluation of the student in the classroom and lecture participations based on the Power Point presentation program by sending files in the form of (audio presentation slides) to students.
- Sending lectures in the form of pdf files for each lecture through the Google classroom program, which includes a set of vocabulary according to the weekly schedule of lectures.

Hold discussions with students at the end of each lecture on the topics of the lecture.

9. Course Structure

Evaluation method	Learning method	Unit or subject name	Required Learning	Hours	The week
			Outcomes		
Discussions		Introduction: What		2	First
Exams		are		hours	week
		human rights?			
		Chapter One:			
		Historicity of			
		Human Rights			
Discussions		The history of		2	Second
Exams		human rights in		hours	week
		Iraqi civilizations -			
		Greek			
		civilization -			
		Roman – Persian			
		and Egyptian			
		civilization			
Discussions		Human rights in		2	Third
Exams		the monotheistic		hours	week
		religions of			
		Judaism –			

[]			
	Christianity		
	and Islam		
Discussions	Historical human	2	Fourth
Exams	rights in the	hours	week
	Middle Ages		
	Feudalism		
	- the Church and		
	the Royal		
	Institution		
Discussions	Human rights in	2	Fifth
Exams	rights legislation	hours	week
	- revolutions of the		
	West and the East		
Discussions	Human rights,	2	Week
Exams	identification	hours	Six
	and definition		
Discussions	First month exam	2	Week
Exams		hours	seven
Discussions	Forms of human	2	Week
Exams	rights	hours	eight
Discussions	Civil and political	2	Week
Exams	human rights	hours	Nine
Discussions	Economic, social	2	Week
Exams	and cultural	hours	Ten
	human rights		
Discussions	Modern human	2	Week
		-	

Exams		rights			hours	Eleven
Discussions		Human rights in			2	Twelfth
Exams		the Universal			hours	week
		Declaration				
		1948				
Discussions		NGOs			2	Thirteent
Exams		and Human Rigl	nts		hours	h week
Discussions		Human rights in			2	Fourteen
Exams		the Iraqi			hours	th week
		constitution				
		in 2005				
		Second month e	exam			Week
						V
						ten
10. Course Evaluation						
Distributing the score	re out of 100	according to the	task	s assigned to t	the stude	nt such as
daily preparation, da	aily, oral, mo	nthly, written exa	ms, r	reports etc		
11. Learning and Teach	ning Resourc	es				
1- Human Rights,	written by:	Hafez Alwan	Req	uired textbooks	s (methoo	lology, if an
Hammadi		Al-Dulaimi.				
2- Universal human	rights betwe	een theory and				
practice, by	Jacques	Donnelly.				
3– Human Rights,	Children a	nd Democracy,				
written by: Maher Sa	aleh Allawi	Al-Jubouri and				
others						
For the sake of human rights, written by Ansam				n references (s	ources)	
Amer Al-Sudani.				X	,	
Human Rights in the V	Vestern Relig	jious Heritage				
and Islam, written by:	Muhammad	Galaa Idris and				
Amal Muhammad Abd	ul Rahman F	Rabie				

Iraqi -reviewed journals	Recommended books and referen				
/https://www.elsevier.com	(scientific journals, reports)				
1- The website of the United Nations:	Electronic References, Websites				
https://www.un.org/ar/global					
issues/human-rights					
2- Website of the Office of the High					
Commissioner of the United Nations High					
Commissioner for Human Rights					
https://www.ohchr.org/ar/hr-bodies/hrc/					

1. Course Title:						
			Computer applications	51		
2. Course Code						
			U014018			
3. Semester / Ye	ear					
			First / autumn			
4. The history of	preparatio	on of this	description			
			2024			
5. Available Atte	ndance Fo	orms				
			Came			
6. Number of Cr	edit Hours	(Total) /	Number of Units (Tota	ll)		
		3 ho	urs of work Number of	units 1		
7. Course admin	istrator's r	name (if n	nore than one name)			
Name: Prof. Sami	r Saud Ins	side the e	-mail : samirsaud@mu	u.edu.iq		
Course Objectives						
Course Objectives		1- Ident	ify the concept of operative	ating systems in	the com	puter.
		2- Learr	n about applications an	d software.		
		3- How	to use the computer a	nd manage appli	cations	
9. Teaching and	Learning	Strategies	3			
Audio method	s (teachin	g explana	ition of the subject)		Str	ategy
Blackboard w	riting style					
The method of	of direct d	ialogue b	etween the teacher ar	nd the student w	/ith	
the evaluation	of the stu	udent in th	ne classroom participat	ions		
10. Course Struct	ure					
Evaluation	aluation Learning method Unit or subject Required Hours The					The
method		name Learning we				week
				Outcomes		
Panid over		turo	Identify the	Outcomes Theoretical	2	1

		components			
Rapid exam	Lecture	Computer hardware	Theoretical lecture	2	2
Rapid exam	Lecture	Computer software components	Theoretical lecture	2	3
Rapid exam	Lecture	Practical applications	Theoretical lecture	2	4
First month exam	Theoretical exam	examination	examination	2	5
Rapid exam	Lecture	Software & Applications	Theoretical lecture	2	6
Rapid exam	Lecture	Win7 OS	Theoretical lecture	2	7
Rapid exam	Lecture	Main interface of the operating system	Theoretical lecture	2	8
Rapid exam	Lecture	Files and folders	Theoretical lecture	2	9
Second month exam	Theoretical exam	examination	examination	2	10
Rapid exam	Lecture	Create abbreviations and manage the library	Theoretical lecture	2	11
Rapid exam	Lecture	Practical applications	Theoretical lecture	2	12
Rapid exam	Lecture	Smart gadgets and their settings	Theoretical lecture	2	13
Rapid exam	Lecture	Computer Control Panel	Theoretical lecture	2	14
Rapid exam	Lecture	Practical applications	Theoretical lecture	2	15
Course Evaluation					
Distributing the sc	ore out of 100 ac	cording to the tasks as	signed to the s	student	such as

daily preparation, daily, oral, monthly, written exams, reports etc					
12. Learning and Teaching Resources					
uter and its office applications	Required textbooks (methodology, if any				
Electronic Calculator Programming	Main references (sources)				
Hashem Abdul karim and Adnan Abdul Latif					
Fundamentals of Automated Analysis	Recommended books and references				
Abdul latif Abdul latif Abdul halim	(scientific journals, reports)				
https://eme.uotechnology.edu.iq/index.php/ar/9-	Electronic References, Websites				
explore/359-2017-12-02-12-35-17					

1. Course T	ïtle:				
	I	Principles of soil scien	се		
2. Course Code					
0024103					
3. Semester / Y	ear				
		First / autumn			
4. The history of	preparation of thi	s description			
		2024			
5. Available Atte	ndance Forms				
		Came			
6. Number of Cr	edit Hours (Total)	/ Number of Units (To	otal)		
	2 hours theoretica	al and 3 hours practica	I Number of ur	nits 3	
7. Course admir	istrator's name (if	more than one name) 		
Name: Prot. Rar	11m Alwan Haloui	Email: raneemnaloi@r	nu.eau.iq		
Course Objective	es				
Introducir	ng the student to	the properties Cours	e Objectives:		
the soil					
Knowledge	ge of the types of	soil clays			
Classifica	ition of soils and la	ands in Iraq			
Teaching and Le	arning Strategies	· · · · ·			
Audio methods (teaching explanat	ion of the subject)		Stra	itegy
Blackboard writing style					
The method of c	lirect dialogue bet	ween the teacher and	the student wi	ith	
	student in the cla	ssroom participations			
evaluation of the					
evaluation of the Course Structure	;				
evaluation of the Course Structure Evaluation	Learning	Unit or subject	Required	Hours	The
evaluation of the Course Structure Evaluation method	e Learning method	Unit or subject name	Required Learning	Hours	The week
evaluation of the Course Structure Evaluation method	e Learning method	Unit or subject name	Required Learning Outcomes	Hours	The week
evaluation of the Course Structure Evaluation method Rapid exam	Eearning method Lecture	Unit or subject name Definitions and	Required Learning Outcomes Theoretical	Hours 2	The week

		soil			
Rapid exam	Lecture	Soil formation and	Theoretical	2	2
		development	lecture		
Rapid exam	Lecture	Physical properties	Theoretical	2	3
		of the soil	lecture		
Rapid exam	Lecture	Physical properties	Theoretical	2	4
		of the soil	lecture		
First month	Theoretical	examination	examination	2	5
exam	exam				
Rapid exam	Lecture	Soil water	Theoretical	2	6
			lecture		
Rapid exam	Lecture	Colloids and	Theoretical	2	7
		chemical properties	lecture		
		of soil			
Rapid exam	Lecture	Types of soil clays	Theoretical	2	8
		and their respective	lecture		
		qualities			
Rapid exam	Lecture	Organic colloids	Theoretical	2	9
			lecture		
Second month	Theoretical	examination	examination	2	10
exam	exam				
Rapid exam	Lecture	Soil salinity	Theoretical	2	11
			lecture		
Rapid exam	Lecture	Classification of	Theoretical	2	12
		soils affected by	lecture		
		salinity			
Rapid exam	Lecture	Biological properties	Theoretical	2	13
		in soil	lecture		
Rapid exam	Lecture	Important nutrients	Theoretical	2	14
		in the soil	lecture		
Rapid exam	Lecture	Classification of	Theoretical	2	15
		soils and lands in	lecture		
		Iraq			
11. Course Evalu	ation				
Distributing the	score out of 100) according to the tasks	assigned to the	e stude	nt such

as daily preparation, daily, oral, monthly, written exa	ams, reports etc
Learning and Teaching Resources	
Principles of soil science	Required textbooks (methodology
Abdullah Najm Al-Ani	any)
Chemical analysis of soil	Main references (sources)
Prof. Hamdallah Suleiman Rahi Dr. Mohamed Ali	
Gamal	
Iraqi academic scientific journals	Recommended books and
	references (scientific journals,
	reports)
https://mail.almerja.com/reading.php?idm=195342	Electronic References, Websites

1.	Course Titl	e:						
		F	Principles of Agr	icult	ural Economics			
2.	Course Co	de						
			0C2	241()4			
3.	Semester /	Year						
			Sprin	ng/ F	irst			
4.	The history	of preparation	of this description	on				
			2	024				
5.	Available A	ttendance Form	IS					
	Came							
6.	Number of	Credit Hours (T	⁻ otal) / Number	of U	Inits (Total)			
		2	hours theoretic	al nu	umber of units 2			
7.	Course Tea	acher Name (if	more than one i	nam	e is mentioned)			
	Name: Ass	oc. Prof. Haide	r Hamid Balau I	Ema	il: haiderblaw@n	nu.e	du.iq	
8.	Course Ob	jectives						
	Knowle	edge of the eco	nomy and the	(Course Objective	es:		
	role of agri	cultural activity	in the national					
	economy, a	agricultural mark	eting and					
	finance as	well as agricultu	ural policy					
9.	Teaching a	nd Learning Str	ategies					
	Audio meth	nods (teaching e	explanation of th	ie si	ıbject)		Str	rategy
	Blackboard	writing style						
	The metho	d of direct dialo	ogue between t	he t	eacher and the	stud		
	with the ev	aluation of the s	student in the cl	assr	oom participatior	าร		
0.	Course Str	ucture						
	Evaluatio	Learning	Unit or		Required		Hour	The
	n method	method	subject nan	ne	Learning	:	S	wee
					Outcomes			k

Rapid	Lecture	General	Theoretical	2	1
exam		Introduction	lecture		
		to			
		Agricultural			
		Economics			
Rapid	Lecture	Cultivation	Theoretical	2	2
exam		and its	lecture		
		features			
Rapid	Lecture	The role of	Theoretical	2	3
exam		agricultural	lecture		
		activity in			
		the national			
		economy			
Rapid	Lecture	Economics	Theoretical	2	4
exam		of	lecture		
		agricultural			
		production			
First	Theoretic	examination	examinatio	2	5
month	al exam		n		
exam					
Rapid	Lecture	Agricultural	Theoretical	2	6
exam		Marketing	lecture		
Rapid	Lecture	Agricultural	Theoretical	2	7
exam		Prices	lecture		
Rapid	Lecture	Farm	Theoretical	2	8
exam		Managemen	lecture		
		t			
Rapid	Lecture	Agricultural	Theoretical	2	9
exam		Cooperation	lecture		
Second	Theoretic	examination	examinatio	2	10
month	al exam		n		
exam					
Rapid	Lecture	Agricultural	Theoretical	2	11
exam		Finance	lecture		
Rapid	Lecture	Agricultural	Theoretical	2	12

exam		policy		lecture		
Rapid	Lecture	Agricultural		Theoretical	2	13
exam		Planning		lecture		
Rapid	Lecture	Agricultura	al	Theoretical	2	14
exam		Developme	en	lecture		
		t				
Rapid	Lecture	Agricultura	al	Theoretical	2	15
exam		costs		lecture		
11. Course Eva	aluation					
Distributing	the score out	of 100 accord	ling to	o the tasks assi	gned to the	e student
such as da	ily preparation,	daily, oral, mo	nthly,	written exams, r	eports	etc
12. Learning a	nd Teaching Re	sources				
Introduction to	Agricultural Ec	onomics	Req	uired textbooks	(methodolo	gy, if any)
Abdul saheb /	Alwan					
Scientific jour	nals and articles	6	Mai	n references (sou	urces)	
specialized b	ooks in the fie	eld of agricult	Rec	ommended boo	ks and re	eferences
economics,			(scientific journals, reports)			
Scientific web	sites specialized	d in the study o	Elec	tronic Reference	es, Website	S
Agricultural ed	conomics					

_							
1	. Course Title:						
		Bio	chemist	ry			
2	2. Course Code						
		0	C24011				
3	3. Semester / Year						
		Sp	ring/ Fir	st			
4	I. The history of preparation	n of this descrip	otion				
			2024				
5	5. Available Attendance Fo	rms					
			Came				
6	5. Number of Credit Hours	(Total) / Numbe	er of Un	its (Total)			
	2 hours the	eoretical and 3 I	nours pr	actical Number	of u	nits 3	
7	 Course administrator's n 	ame (if more the	an one i	name)			
	Name: Dr. Esraa Rahi S	Sayhoud Email:	esra.rał	ni@mu.edu.iq			
8	3. Course Objectives						
	 Introducing the 	student to	Cou	urse Objectives	:		
	importance of biochemis	try					
	Carbohydrate study						
	 Study of amino acid 	S					
	Study of lipids						
	Nucleic acid study						
9	 Teaching and Learning \$ 	Strategies					
	Audio methods (teaching	g explanation of	the sub	ject)		Stra	ategy
	Blackboard writing style						
	The method of direct di	alogue betweer	the tea	acher and the	stud		
	with the evaluation of the	e student in the	classro	om participatior	าร		
0	. Course Structure			_			
	Evaluation Learning	Unit or s	ubject	Required	F	lours	The
	method method	name		Learning			we

			Outcome		ek
			S		
Rapid	Lecture	Carbohydrates	Theoretic	2 hours	1
exam		- definition -	al lecture	al	
		sections		3 hours	
Danid	Locturo	Managagaharid	Theoretic	practical 2 hours	2
Карій	Lecture	Wonosacchand		theoretic	2
exam		es	al lecture	al 2 hours	
				practical	
Rapid	Lecture	Low	Theoretic	2 hours	3
exam		polysaccharide	al lecture	theoretic al	
		S		3 hours	
				practical	
Rapid	Lecture	Polysaccharide	Ineoretic	theoretic	4
exam		S	al lecture	al	
				3 hours practical	
First	Theoretica	examination	examinati	2 hours	5
month	l exam		on	theoretic	
exam				3 hours	
				practical	
Rapid	Lecture	Amino acids –	Theoretic	2 nours theoretic	6
exam		their divisions	al lecture	al	
		– their		3 hours	
		interactions		prociour	
Rapid	Lecture	Proteins -	Theoretic	2 hours	7
exam		their structure	al lecture	al	
		 construction 		3 hours	
		– their		practical	
		divisions			
Rapid	Lecture	Fatty acids –	Theoretic	2 hours	8
exam		their divisions	al lecture	tneoretic al	
		– their		3 hours	
		interactions		practical	
Rapid	Lecture	Simple sinters	Theoretic	2 hours	9
exam		– their	al lecture	theoretic al	
		composition –		3 hours	
				practical	

	тт				
		their sections			
Second	Theoretica	examination	examinati	2 hours	10
month	l exam		on	al	
exam				3 hours	
				practical	
Rapid	Lecture	Compound	Theoretic	2 hours theoretic	11
exam		and derived	al lecture	al	
		lipids - their		3 hours	
		composition -		practical	
		their divisions			
Rapid	Lecture	Nucleic acids,	Theoretic	2 hours	12
exam		their	al lecture	theoretic al	
		importance		3 hours	
				practical	
Rapid	Lecture	Installation,	Theoretic	2 hours theoretic	13
exam		Sections	al lecture	al	
				3 hours	
Banid	Looturo	Enzymon their	Theoretic	2 hours	1.4
Rapiu	Lecture		medietic	theoretic	14
exam		qualities	al lecture	al	
				3 nours	
Rapid	Lecture	Factors	Theoretic		15
exam		affecting it	al lecture		
11. Course Eva	aluation				
Distributing	the score out o	f 100 according to	the tasks assig	gned to the	student
such as dai	ily preparation, d	aily, oral, monthly,	written exams, r	eports e	etc
12. Learning ar	nd Teaching Res	ources			
Foundation	s of Biochemistry	/	Required text	ooks (met	hodology
Aldaoudi			any)	, ,	
Integrated E	Biochemistry		Main reference	s (sources)	
Hohn W. P	elley				
List of chen	nistry journals		Recommended	books	and
			references (s	scientific	ournals,
			reports)		,
https://www	v.chemistrv1scier	nce.com/2018	Electronic Refe	rences. We	bsites
/08/2-pdf	44.html	,		, -	

 Cot Cot Sen Sen The The Ava Nur Nur Cot Nar 	urse Code mester / Yea e history of p ailable Atten mber of Cre	ar preparation of t idance Forms idit Hours (Tota 2 hours theor strator's name (this de	Principles of fiel 0024102 Spring/ Fin scription 2024 Came umber of Units and 3 hours p	ld crops 2 rst (Total) ractical Number o me)	f units	s 3	
2. Cou 3. Sen 4. The 5. Ava 6. Nur 7. Cou	urse Code mester / Yea e history of p ailable Atten mber of Cre	ar preparation of t idance Forms edit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	Came umber of Units and 3 hours p	id crops 2 rst (Total) ractical Number o	f units	s 3	
2. Cou 3. Sen 4. The 5. Ava 6. Nur 7. Cou	urse Code mester / Yea e history of p ailable Atten mber of Cre	ar preparation of t idance Forms edit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	0024102 Spring/ Finescription 2024 Came umber of Units and 3 hours p	2 rst (Total) ractical Number o me)	f units	\$ 3	
3. Sen 4. The 5. Ava 6. Nur 7. Cou	mester / Yea e history of p ailable Atten mber of Cre	ar preparation of t idance Forms edit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	0024102 Spring/ Finescription 2024 Came umber of Units and 3 hours p	2 rst (Total) ractical Number o me)	f units	\$ 3	
3. Sen 4. The 5. Ava 6. Nur 7. Cou	mester / Yea e history of p ailable Atten mber of Cre	ar preparation of t idance Forms idit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	Spring/ Finescription 2024 Came umber of Units and 3 hours p	rst (Total) ractical Number o	f units	s 3	
4. The 5. Ava 6. Nur 7. Cou	e history of p ailable Atten mber of Cre	preparation of t idance Forms idit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	Spring/ Filescription 2024 Came umber of Units and 3 hours p	rst (Total) ractical Number o me)	f units	\$ 3	
 4. The 5. Ava 6. Nur 7. Cou Nar 	e history of p ailable Atten mber of Cre	preparation of t idance Forms idit Hours (Tota 2 hours theor strator's name (this de al) / Nu retical (if mor	2024 2024 Came umber of Units and 3 hours p	(Total) ractical Number o me)	f units	s 3	
5. Ava 6. Nur 7. Cou	ailable Atten mber of Cre urse adminis	ndance Forms edit Hours (Tota 2 hours theor strator's name (al) / Nu retical (if mor	2024 Came umber of Units and 3 hours p	(Total) ractical Number o me)	f units	\$ 3	
 5. Ava 6. Nur 7. Cou Nar 	ailable Atten mber of Cre urse adminis	ndance Forms edit Hours (Tota 2 hours theor strator's name (al) / Nu retical (if mor	Came umber of Units and 3 hours p re than one na	(Total) ractical Number o me)	f units	\$ 3	
6. Nur 7. Cou	mber of Cre urse adminis	edit Hours (Tota 2 hours theor strator's name (al) / Nu retical (if mor	Came umber of Units and 3 hours p re than one na	(Total) ractical Number o me)	f units	\$ 3	
 Nur 7. Cou 	mber of Cre urse adminis	edit Hours (Tota 2 hours theor strator's name (al) / Nu retical (if mor	umber of Units and 3 hours p re than one na	(Total) ractical Number o me)	f units	\$ 3	
7. Cou	urse adminis	2 hours theor strator's name	retical (if mor	and 3 hours p e than one na	ractical Number o me)	f units	s 3	
7. Cou	urse adminis	2 hours theorem 2 hours theore	retical (if mor	and 3 hours p	ractical Number o me)	f units	s 3	
7. Cou Nar	urse adminis	strator's name	(if mor	e than one na	me)			
Nar	. Course administrator's name (if more than one name)							
1101	me: Assoc.	Prof. Shaima I	` Ibrahim	n Mahmoud En	nail : Shaimaaibra	ahim@)mu.e	edu.iq
								-
8. Cou	urse Objecti	ives						
Теа	aching the	student about	t the	Course Ob	jectives:			
mos	most important field crops and							
affe	affected by other factors							
9. Tea	aching and I	Learning Strate	egies					
1. E	Explanation	and clarificatio	n				S	trategy
2. L	Lecture met	ihod						
3. 8	Student grou	ups						
4. F	Practical les	sons in laborat	tories					
0. Cou	urse Structu	ire					L	
Eva	aluation	Learning	Un	nit or subject	Required	Н	ours	The
met	thod	method	na	me	Learning			week
					Outcomes			
Ran	pid	Lecture	Fie	eld crops: -	Theoretical	2		1
	im l		de	finition.	lecture			
2. L 3. S 4. F 0. Cou Eva met	Lecture met Student grou Practical les urse Structu aluation thod	hod ups sons in laborat ire Learning method	tories Un na	nit or subject me	Required Learning	Н	ours	The week

		adaptation of			
		plants to light,			
		importance			
		Light in seed			
		germination			
Rapid	Lecture	Water, its	Theoretical	2	7
exam		importance, the	lecture		
		division of			
		plants			
		according to			
		their water			
		needs			
Rapid	Lecture	Soil,	Theoretical	2	8
exam		composition,	lecture		
		salinity.			
		adaptation of			
		crops to salinity			
Rapid	Lecture	The impact of	Theoretical	2	9
exam		life factors on	lecture		
		crop			
		productivity			
Second	Theoretical	examination	examination	2	10
month	exam			-	10
exam	0710111				
Rapid	Lecture	Agricultural	Theoretical	2	11
exam		Rotations	lecture	2	
Rapid	Lecture	Iraq's main field	Theoretical	2	12
exam		crops	lecture	2	12
Rapid	Lecture	Jungle and	Theoretical	2	13
exam	20010	ways to combat	lecture	-	
CAGIN		it	1001010		
Rapid	Lecture	Agricultural	Theoretical	2	14
exam	*	Rotations	lecture	_	
Rapid	Lecture	Breeding and	Theoretical	2	15
exam		improvement of	lecture	_	

field crops	s			
11. Course Evaluation				
Distributing the score out of 100 according to the tasks assigned to the student such as				
daily preparation, daily, oral, monthly, writte	en exams, reports etc			
12. Learning and Teaching Resources				
ciples of field crops	Required textbooks (methodology, if any)			
tor Majeed Mohsen Alansari Doctor Abdul ha				
Ahmed Alyounis				
Ghanem Saadallah Hassawi Dr. Faqi Sha				
Shamma				
From methodological books, auxiliary	Main references (sources)			
books, the Internet and scientific				
research				
Scientific journals in the main specialization	Recommended books and references			
	(scientific journals, reports)			
https://agr.mu.edu.iq/	Electronic References, Websites			

1.	Course Title:			
	English2			
2.	Course Code			
	U024016			
3.	Semester / Year			
	Spring/ First			
4.	. The history of preparation of this description			
	2024			
5.	. Available Attendance Forms			
	Came			
6.	Number of Credit Hours (Total) / Number of Units (Total)			
	2 hours theoretical number of units 2			

7.	Course administrator's name (if more than one name)							
	Name: Lectur	er Dr. Mohammed A	Abdulridha Nas	ser ,				
	Email: mohan	nmed.naser@mu.ed	lu.iq					
8.	Course Objec	tives						
	It aims to	teach the stude	each the student English Course Objectives:					
	language	tools from c	onjunctions,					
	prepositions a	ind others						
9.	Teaching and	Learning Strategies						
	Audio method	s (teaching explana	tion of the sub	ject)	St	rategy		
	Blackboard w	riting style						
	The method	of direct dialogue t	petween the te	eacher and the	stud			
	with the evalu	ation of the student	in the classro	om participations				
0.	Course Struct	ure						
	Evaluation	Learning	Unit or	Required	Hou	Th		
	method	method	subject	Learning	rs	е		
			name	Outcome		we		
				s		ek		
	Rapid exam	Lecture	Tools of	Theoretic	2	1		
			kindness	al lecture				
	Rapid exam	Lecture	Tools of	Theoretic	2	2		
			kindness	al lecture				
	Rapid exam	Lecture	Prepositio	n Theoretic	2	3		
			S	al lecture				
	Rapid exam	Lecture	Prepositio	n Theoretic	2	4		
			S	al lecture				
	First month	Theoretical	examination	o examinat	2	5		
	exam	exam	n	ion				
	Rapid exam	Lecture	Passive	Theoretic	2	6		
				al lecture				
	Rapid exam	Lecture	Passive	Theoretic	2	7		
				al lecture				
	Rapid exam	Lecture	Negative	Theoretic	2	8		
				al lecture				

Rapid exam	Lecture	Nega	tive	Theoretic	2	9
				al lecture		
Second	Theoretical	examii	natio	examinat	2	10
month exam	exam	n		ion		
Rapid exam	Lecture	Ques	tion	Theoretic	2	11
		compo	sitio	al lecture		
		n				
Rapid exam	Lecture	Ques	tion	Theoretic	2	12
		compo	sitio	al lecture		
		n				
Rapid exam	Lecture	Additi	onal	Theoretic	2	13
		rule	s	al lecture		
Rapid exam	Lecture	Light	ing	Theoretic	2	14
		rule	s	al lecture		
Rapid exam	Lecture	Additi	onal	Theoretic	2	15
		rule	s	al lecture		
11. Course Evalua	ation					
Distributing th	e score out of 100	according	to the	e tasks assign	ed to the	student
such as daily	preparation, daily, c	oral, monthl	y, writ	ten exams, rep	oorts e	tc
12. Learning and	Teaching Resource	s				
ting Academic E	English, Level 1	by Alice	Re	equired textbo	oks (met	hodology
Oshima			ar	іу)		
			M	ain references	(sources)	
			Re	ecommended	books	and
			re	ferences (sc	ientific j	ournals,
			re	ports…)		
https://www.e	f.com/wwar/blog/la	nguage/d	El	ectronic Refere	ences, We	bsites
ystopian-book	s-to-learn-english	/				

1.	Course Title:						
	Arabic Language						
2.	Course Co	de					
			ι	U02401	7		
3.	Semester /	Year					
			Fir	rst / Spr	ing		
4.	The history	of preparation of	of this descri	iption			
				2024			
5.	Available A	ttendance Form	S				
				Came			
6.	Number of	Credit Hours (To	otal) / Numb	er of U	nits (Total)		
		2	hours theore	etical nu	mber of units 2		
7.	. Course administrator's name (if more than one name)						
	Name: Eng. Amer Mousa Kazem Email : amermousak@mu.edu.iq						
8.	3. Course Objectives						
	Teaching t	the student gra	mmar and	Cou	irse Objectives:		
	syntax, as	well as rhetoric	in the Holy				
	Quran						
9.	Teaching a	nd Learning Stra	ategies				
	1Explanatio	on and clarification	on			Str	ategy
	2Lecture m	nethod					
0.	Course Str	ucture					
	Evaluatio	Learning	Unit or		Required	Hour	The
	n method	method	subject	name	Learning	S	wee
					Outcomes		k
	Rapid	Lecture	Rhetoric	; in	Theoretical	2	1
	exam		the Holy	/	lecture		
			Quran				
	Rapid	Lecture	Interpret	tation	Theoretical	2	2
	exam		of twent	у	lecture		
			verses				

Rapid	Lecture	Arabic /	Theoretical	2	3
exam	Lootaro	Grammar and	lecture	2	5
o dani		Arabic	lootaro		
Rapid	Lecture	The debutante	Theoretical	2	4
exam	20010	and the news	lecture	2	
First	Theoretical	examination	examinatio	2	5
month	exam		n	2	
exam	0710111				
Rapid	Lecture	Transcribers	Theoretical	2	6
exam	20000	Tanconsoro	lecture	2	0
Rapid	Lecture	Imperfect	Theoretical	2	7
exam		verbs	lecture	_	
Rapid	Lecture	Effects	Theoretical	2	8
exam			lecture	_	0
Rapid	Lecture	Setup	Theoretical	2	9
exam			lecture	_	-
Second	Theoretical	examination	examinatio	2	10
month	exam		n	_	
exam					
Rapid	Lecture	Hamza and	Theoretical	2	11
exam		dictation	lecture		
Rapid	Lecture	Rules for	Theoretical	2	12
exam		writing Taa	lecture		
Rapid	Lecture	Ages of	Theoretical	2	13
exam		Arabic	lecture		
		literature			
Rapid	Lecture	Old poetry	Theoretical	2	14
exam			lecture		
Rapid	Lecture	Writing	Theoretical	2	15
exam		common	lecture		
		mistakes			
11. Course Eva	aluation				1
Distributing	the score out o	f 100 according to	the tasks assig	ned to the	e student
such as da	ily preparation, d	aily, oral, monthly, v	written exams, re	eports	etc
12. Learning an	nd Teaching Res	ources			

bic Language Book / Part One	Required textbooks (methodology,
id Sabah al–Tamimi and Taghreed Fadel Abb	any)
	Main references (sources)
	Recommended books and
	references (scientific journals,
	reports)
https://www.wuduh1.com/2023/10/book	Electronic References, Websites
s-arabic.html	

1.	Course Title:				
	Computer applications2				
2.	Course Code				
	U024018				
3.	Semester / Year				
	Spring/ First				
4.	The history of preparation of this description				
	2024				
5.	Available Attendance Forms				
	Came				
6.	Number of Credit Hours (Total) / Number of Units (Total)				
	3 hours practical number of units 1				
7.	Course administrator's name (if more than one name)				
	Name: Prof. Samir Saud Inside the e-mail : samirsaud@mu.edu.iq				
8.	Course Objectives				
	1. Identify office programs, including (Excel program).Course Objectives:2. Manage databases using Excel				
9.	Teaching and Learning Strategies				
	Audio methods (teaching explanation of the subject)StrategyBlackboard writing styleThe method of direct dialogue between the teacher and the stud				

,	with the evaluation of the student in the classroom participations					
0.	Course Struc	ture				
	Evaluation method	Learning method	Unit or subject name	Required Learning Outcome s	Hour s	The we ek
	Rapid exam	Lecture	Learn about office programs	Theoretic al lecture	2	1
	Rapid exam	Lecture	The main interface of Excel	Theoretic al lecture	2	2
	Rapid exam	Lecture	Save Excel workbooks, autosave and save modification s	Theoretic al lecture	2	3
	Rapid exam	Lecture	Create and manipulate tables in Excel	Theoretic al lecture	2	4
	First month exam	Theoretical exam	examination	examinati on	2	5
	Rapid exam	Lecture	Identify the types of data that can be entered into Excel cells	Theoretic al lecture	2	6
	Rapid exam	Lecture	Write equations in Excel	Theoretic al lecture	2	7
	Rapid	Lecture	Ready-	Theoretic	2	8

		1				1
exam		mad	е	al lecture		
		formu	las			
Rapid	Lecture	Types	of	Theoretic	2	9
exam		functior	ns in	al lecture		
		Exce	əl			
Second	Theoretical	examina	ation	examinati	2	10
month	exam			on		
exam						
Rapid	Lecture	How	to	Theoretic	2	11
exam		write	а	al lecture		
		function	and			
		get res	ults			
Rapid	Lecture	Practi	cal	Theoretic	2	12
exam		applicat	tions	al lecture		
Rapid	Lecture	Table	and	Theoretic	2	13
exam		text formats		al lecture		
Rapid	Lecture	Find	l,	Theoretic	2	14
exam		replace,	and	al lecture		
		alphabe	etical			
		orde	er			
Rapid	Lecture	Practi	cal	Theoretic	2	15
exam		applicat	tions	al lecture		
11. Course Eval	uation					
Distributing 1	the score out of 10	0 according	g to th	ie tasks assign	ed to the	student
such as daily	y preparation, daily,	oral, month	ıly, wri	tten exams, rej	ports e	etc
12. Learning and	d Teaching Resourc	ces				
nputer and its of	fice applications		Re	equired textbo	oks (met	hodology
			an	ıy)		
Electronic Ca	alculator Programm	ing	Ma	ain references	(sources)	
Hashem Ab	dul karim and Ad	nan Abdul				
Latif						
Fundamenta	Is of Automated An	alysis	Re	ecommended	books	and
Abdul latif Al	bdul latif Abdul halir	m	re	ferences (sc	ientific	journals,
			re	ports)		
https://eme.	uotechnology.edu.id	q/index.ph	Ele	ectronic Refere	nces, We	bsites
L						

p/ar/9-explore/359-2017-12-02-12-	
35-17	

1.	Course Name							
	Principles of microbiology							
2.	Course Code							
	0C14203							
3.	Semester / Year							
	Semester / First Semester							
4.	The history of preparation of this description							
	2024							
5.	Available Attendance Forms							
	Came							
6.	Number of Credit Hours (Total) / Number of Units (Total)							
	75 hours (30 theoretical + 45 practical) / 3 units							
7.	Course administrator's name (if more than one name)							
	Name: Assoc. Prof. Dr. Difaf Jabbar Chamran Email : dhifaf15@mu.edu.iq							
8.	Course Objectives							
	* Introducing the student to the nature of microbiology Course Ob							
	* Different types of microorganisms							
	* Use of microorganisms in the agricultural field							
9.	Teaching and Learning Strategies							
	A – Cognitive objectives		Strategy					
	* Enables the student to understand the nature of microbiolog	ay in the second s						
	* Enable the student to distinguish between different types							
	microbiology							
	* Enable the student to focus on vital activities for all types							
	* Enabling the student to know the importance of microbiology in							
	agricultural field							
	B- Skills Objectives							
-	Development of bacteria and fungi							

- -	Isolation and purification Antibiotic sensitivity test								
0.	. Course Structure								
	Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hour s	Thewek			
	Oral	Lecture	A brief history of	Memorizati	2	1			
	exams	and	microbiology, the	on,	hours theoret				
		discussio	definition of	understand	ical				
		n	microbiology and	ing,	3 hours				
			its types and its	practical	practic				
			relationship to	application	al				
			other sciences						
	Rapid	Lecture	Bacteria forms	Memorizati	2 bours	2			
	exam	and	their composition	on,	theoret				
		discussio		understand	ical 3				
		n		ing,	hours				
				practical	practic				
				application	4				
	Oral	Lecture	Different metabolic	Memorizati	2 hours	3			
	exams	and	activities of	on,	theoret				
		discussio	bacteria	understand	ical 3				
		n		ing,	hours				
				practical	practic al				
				application					
	Rapid	Lecture	Fungi general	Memorizati	2 hours	4			
	exam	and	characteristics	on,	theoret				
		discussio	types	understand	ical 3				
		n		ing,	hours				
				practical	practic al				
			application						
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Oral	Lecture	Various metabolic	Memorizati	2 hours	5				
exams	and	activities of fungi	on,	theoret					
	discussio	and their	understand	ical 3					
	n	classification	ing,	hours					
			practical	practic					
			application	aı					
		Monthly exam			6				
Oral test	Lecture	Viruses are	Memorizati	2	7				
	and	defined and their	on,	hours theoret					
	discussio	composition and	understand	ical					
	n	their sections	ing,	3 hours					
			practical	practic					
			application	al					
Rapid	Lecture	Types of	Memorizati	2	8				
exam	and	multiplication of	on,	hours theoret					
	discussio	viruses	understand	ical					
	n		ing,	3 hours					
			practical	practic					
			application	al					
Oral	Lecture	Algae: definition,	Memorizati	2	ç				
exams	and	structure and	on,	hours theoret					
	discussio	divisions	understand	ical					
	n		ing,	3 bours					
			practical	practic					
			application	al					
Rapid	Lecture	Biofertilizers, types	Memorizati	2	1				
exam	and	and importance	on,	hours theoret	(
	discussio		understand	ical					
	n		ing,	3 bours					
			practical	practic					
			application	al					
Oral	Lecture	Part II Biofertilizers	Memorizati	2	1				
exams	and		on.	hours	1				
	discussio		understand	ical	1				
			anderstand	3					

	n			ing,	hours practic			
				practical	al			
				application				
	editorial	Secor	nd	Memorizati	2	1		
		monthly ex	kam	on,	theoret	2		
				understand	ical			
				ing,	3 hours			
				practical	practic			
				application	al			
Oral	Lecture	Prima	ries,	Memorizati	2	1		
exams	and	definition,	structure	on,	hours theoret	3		
	discussio	and div	isions	understand	ical			
	n			ing,	3 hours			
				practical	practic			
				application	al			
Rapid	Lecture	General	Review	Memorizati	2	1		
exam	and				hours theoret	4		
	discussio			understand	ical			
	n			ing,	3 hours			
				practical	practic			
				application	al			
Written	Written	Compret	nensive	Memorizati	2	1		
exam	exam	exa	m	on,	hours theoret	5		
				understand	ical			
				ing,	3 hours			
				practical	practic			
				application	al			
11.Course Eval	uation							
- Theoretical t	ests: (daily e	xams – month	ly exams ·	- home exercise	s)			
- Practical tes	ts : (daily exa	ms - monthly	exams – ł	nome exercises)				
- Theoretical and practical reports								
12. Learning and	d Teaching Re	sources						
1- Introduction to microbiology Required textbooks								
			Main r	references (sour	ces)			
– Foreig	- Foreign books specialized Recommended books and							

microbiology .	references	(scientific	journals,
	reports)		
Arabic articles issued by academic a professional bodies	Electronic R	eferences, We	bsites

1.	Course Title:					
	Plant eco	ogy				
2.	. Course Code					
	0C1420	02				
3.	Semester / Year					
	Autumn/second					
4.	Date of preparation of this description					
	2023-20)24				
5.	Number of Credit Hours (Total) / Number of U	nits (Total)				
	Number of credit hours (total) 75 hours					
6.	Course Administrator Name:					
	Name: M.D.Ali Halil Naima Email	ali.algayashe@mu.edu	pi.u			
7.	Course Objectives					
	We show students the importance of underst	andi 6g urse Objectives				
	environmental factors from other climatic and oceanisc course description provide					
	conditions and their relationship mainly to plant brief summary of the most impor					
	organisms in a sequential scientific manner, i	n characteristics of the	e course			
	addition to introducing students to environme	ntal The learning outco	mes expecte			
	pollution, its types, damages and future plans	to the student to achi	eve are proc			
	avoid its risks.	whether he has m	ade the mos			
		the available learni	ng opportuni			
		It must be linked	to the prog			
		description.				
8.	Teaching and Learning Strategies					
	Teaching and learning methods		Strategy			
	1 – Explanation and clarification					
	-2Lecture method					
	3-Student groups					
	4–Practical lessons in laboratory					

. Course S	structure				
Evaluat	Practical	Unit or subject	Require	Hours	The
ion		name	d		wee
method			Learnin		k
			g		
			Outcom		
			es		
Discussio				2	First week
Exams				hour	
		The emergence		S	
	Definition of	of ecology, the		theor	
	study of physical	importance of the environment, its		3	
	factors:	modern divisions. Ocean (physical		hour	
		and biological).		s	
				practi	
				cal	Second
Discussio				2 bour	week
Exams		Temperature and		s	
		thermometry, types of		theor	
		temperatures, study of some		etical	
		laboratory devices used to measure		3	
		temperature, study		hour	
		graphs.		S	
				practi	
Discussid				2	Third
Frame	Air humidity			hour	week
	and relative			s	
	of some	Food chain and		theor	
	laboratory devices used to	food web, ecosystem and its		etical	
	measure relative humidity and	relationship to human ecology.		3	
	study graphical	.		s	
	curves of relative humidity.			practi	
	-			cal	
Discussio	Going out with a	Ecosystem types that include the		2	Fourth week
Exams	scientific tour of the field and	whole ecosystem		hour	
	conducting a field experiment	ecosystem.		S	
	using anvils after	Ecological balance, the most important		theor	

	dividing the students into several groups so that each group grows a specific crop and studies the effect of different temperature and humidity differences, as well as studying the effect of the light factor on	manifestations of environmental imbalance.	etical 3 hour s practi cal	
Discussio Exams	these crops. Study of forms of precipitation: rain, methods of measurement, the importance of rain in desert areas.	Environmental succession includes the introduction - the basic types of succession - succession in basic plants and includes (water succession, drought succession and forms of subtle succession).	2 hour s theor etical 3 hour s practi cal	Fifth week
Discussion Exams		Dew methods of measurement, the date of condensation of dew, sources of dew water, the importance of dew.	2 hour s theor etical 3 hour s practi cal	Week Six
Discussio Exams	Studying the wind factor, studying and watching wind speed and direction measuring devices, wind damage and benefits.	The concept of environmental factors and their relationship to crops, climate and weather, division of world regions according to the prevailing climate.	2 hour s theor etical 3 hour s practi cal	Week seven
Discussio Exams		The most important environmental	2 hour	Week eight

		factors 1. Light / types of light rays, factors affecting the intensity of lighting, division of plants according to their response to photoenergies.	s theor etical 3 hour s practi cal	
Discussio Exams		. Plant efficiency in the use of light, light effects in the plant.	2 hour s theor etical 3 hour s practi cal	Week Nine
Discussic Exams	Study of the atmospheric pressure factor, how to measure atmospheric pressure using scientific devices prepared for this purpose.		2 hour s theor etical 3 hour s practi cal	Week Ten
Discussio Exams		Study of solar radiation factor, how to measure the number of hours of sunshine using different devices, study of graphical curves of solar radiation.	2 hour s theor etical 3 hour s practi cal	Week Eleven
Discussio Exams		Study of evaporative devices	2 hour s theor	Twelft week

Discussic Evaporation factor, study of evaporation measuring devices and identify how to use them, study the ratio between transpiration and evaporation measuring devices and evaporation measuring devices and curves. 2. Temperature, s theor affecting in Divide crops according to affecting in Divide crops according to affecting in Divide crops according to s s practi cal 2. Temperature, s theor etical affecting in Divide crops according to affecting in Divide crops according to beir thermal needs. 2. Temperature, s theor etical affecting in Divide crops according to their thermal needs. 2. Temperature, s theor etical affecting in Divide crops according to their thermal needs. 2. Temperature, s theor etical according a field tour and teaching s theor s theor s theor s theor s theor s theor s theor s s theor s theor s theor s theor s s theor s theo							
Discussie Evaporation factor, study of evaporation measuring devices and identify how to use them, study the ratio between transpiration and evaporation, study of evaporation curves. 2. Temperature, sources and factors affecting it. Divide crops according to their thermal needs. 2. Thirtee theor etical 3. Discussie 2. Fourtee theor etical 3. Fourtee theor etical 3. Discussie 2. Fourtee their thermal needs. 2. Discussie 2. Fourtee their thermal needs. 5. Exams Conducting a field tour and teaching students how to measure the germination rate and chorophyli content in the leaves and measure the leaf area of the crops related to the soli, including: Fourtee the stranston of temperature changes include the experiment. OL Studying the soli factor, studying some of the devices used to study the factors related to the soli, including: Estimation of temperature changes include the experimental method, length of growing season, accumulated heat. Week Ve OL OL Estimation of temperature of temperature of temperature of temperature of temperature of temperature of temperature on plants. Veck Ve					etical		
Discussion Evaporation 2 Theree Exams Evaporation 2. Temperature, sources and factors affecting it. Divide crops according to the theor 3 theor Discussion evaporation, study of evaporation measuring devices and factors affecting it. Divide the response of the crops according to the thermal needs. 3 theor Discussion evaporation, study of evaporation curves. 2. Temperature, sources and factors affecting it. Divide the thermal needs. 3 theor Discussion evaporation curves. Conducting a field to respace of the crops according to the thermal needs. 3 hour Discussion evaporation curves. Conducting a field to respace of the crops according to the the factors and chlorophyll evaporation curves. 3 theor Discussion context in the leaf area of the crops according to the tracks and measure the leaf area of the crops according to the crops according the soil factor, studying the soil factor, studying according to the crops according to the crops according to the crops according the soil factor, studying as some of the devices used to study the factors related to the soil, including: Estimation of temperature of plantes. week <					3		
Discussit Evaporation factor, study of evaporation measuring devices and identify how to use them, study the ratio between and evaporation, study of evaporation evaporation and evaporation, study of evaporation and evaporation curves. 2. Temperature, suffecting to Divide roops according to their thermal needs. 2. hour stiel 7. thermal suffecting to their thermal needs. 2. theor stiel 7. theor stiel Discussit Conducting a field tour and teaching students how to measure the germination rate and chorophylit content in the germination rate area of the crops planted in the implemented experiment. 2 theor study of students how to study to students how to theor students how to study the soil factor, studying some of the devices used to study the factors related to the soil, including: Estimation of temperature the crops planted in the implemented experiment. Veck veck the 10. Course Evaluation Estimation of temperature on plants. Study the factors the solid of temperature on plants. Veck veck 10. Course Evaluation 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports etc 11. Learning and Teaching Resources Ecology, Dr. Hikmat Abbas Al-Ani and Required textbooks (methodology, if and <td></td> <td></td> <td></td> <td></td> <td>hour</td> <td></td>					hour		
Discussie Evaporation factor, study of evaporation measuring devices and identify how to use them, study the ratio between transpiration and evaporation, study of evaporation curves. 2. Temperature, sources and factors affecting it. Divide crops according to their therman 2. Temperature, sources and factors affecting it. Divide crops according to their therman 2. Temperature, sources and factors affecting it. Divide crops according to their therman 5. Discussie 2. Temperature, sources and factors affecting it. Divide crops according to their therman 3. Fourier etical Discussie 2. Conducting a field tour and teaching students how to measure the germination rate and chorophylic content in the sare of the crops planted in the implemented experiment. 2. Fourier etical Studying the soil factor, studying some of the devices used to study the factors rehated to the soit, including: Estimation of temperature ethanges the effect of temperature ethanges the effect of temperature of temperature on plants. Week to an 10. Course Evaluation Implemented tour and teaching south as daily preparation, daily, oral, monthly, written exams, reports etc Implemented tous and yearly to the student such as daily preparation, daily, oral, monthly, written exams, reports etc					S		
Discussit Evaporation factor, study of evaporation measuring devices and identify how to use them, study of evaporation, and evaporation, study of evaporation curves. 2. Temperature, sources and factors affecting it. Divide crops according to the ratio between transpiration and evaporation, curves. 2. Temperature, sources and factors affecting it. Divide crops according to the ratio between transpiration curves. 2. Temperature, sources and factors affecting it. Divide crops according to the ratio between transpiration curves. 2. Temperature, sources and factors affecting it. Divide crops according to the ration rate and evaporation, curves. 2. Temperature, sources and factors affecting it. Divide crops according to the rate and the cords and evaporation rate and chorophyli content in the leaves and measure the leaf area of the crops planted in the implemented experiment. 2 Fourtee ath week Studying the soil factor, studying some of the devices used to study th factors. Estimation of temperature efficiency includes the experimental metod, length of groving season, accumulated heat. Temperature of temperature of temperature on plants. Image:					practi		
Discussie Evaporation factor, study of evaporation measuring devices and identify how to use them, study of evaporation and evaporation curves. 2. Temperature, sources and factors affecting it. Divide crops according to their thermal needs. 2 Initrice min week Discussie 2. Temperature, sources and factors affecting it. Divide crops according to their thermal needs. 3 Pourter min week Discussie Conducting a field tour and teaching students how to measure the germination rate and chorophyli content in the leaves and measure the leaf area of the crops planted in the implemented experiment. 2 Fourtee min week Studying the soil devices used to study the factors related to the soil, including: Estimation of temperature chains and party content in the leaves and measure the leaf area of the crops planted in the implemented experiment yeek IO. Course Evaluation Estimation of temperature chaines indude growing season, accumulated heat. yeek IO. Course Evaluation Intervent temperature of temperature on plants. week III. Learning and Teaching Resources Required textbooks (methodology, if ar					cal		
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	Ecology,	Dr. Hikmat Abbas A	I-Ani and Req	uired textbook	s (methodo	logy, if ar	

Main references (sources)
Recommended books and references
(scientific journals, reports)
Electronic References, Websites

1.	Course Name					
	soil fertility					
2.	Course Code					
	0C14204					
3.	Semester / Year					
	Autumn Semester / Se	econd	l			
4.	The history of preparation of this description					
	2024					
5.	Available Attendance Forms					
	Came					
6.	Number of Credit Hours (Total) / Number of Units (T	rotal)				
	2 Theoretical 2 Practical Modules 3					
7.	Course administrator's name (if more than one name	e)				
	Name: Prof. Hanoun Nahi Kazem Email: reda@mu.	edu.i	iq			
8.	Course Objectives					
•	To introduce the student to soil fertility science	С	ourse Objectives			
•	The student should classify the types of eleme					
	and their importance to the plant					
•	The student should detail the factors affecting nutri					
	readiness					
•	To familiarize the student with soil fertility assessme					
•	The student should evaluate the soil eleme					
0	according to their importance to the plant					
9.	Teaching and Learning Strategies		Olivelar			
	I – Explanation and clarification		Strategy			
	2- Lecture method					
	 J- Student Groups A- Practical Josepha 					
	4^- Fraction tessors					
	6 - Self-learning method					
0						
0.						

Evaluatio	Learning	Unit	Required	Hour	The week
n method	method	or	Learning	S	
		subjec	Outcomes		
		t			
		name			
	Explanatio		To identify		
	n and		the student		
Evom	presentatio	soil	about growth	5	The first
Exam	n of the	fertility	and the	3	
	model and		factors		
	lecture		affecting it		
	Explanatio				
	n and		The student		
Evon	presentatio	soil	should know	5	Second
Exam	n of the	fertility	the types of	3	Second
	model and		nutrients		
	lecture				
			The student		
	Explanatio		should		
	n and		recognize the		
E wara	presentatio	soil	movement	F	Third
Exam	n of the	fertility	and	3	THILD
	model and		absorption of		
	lecture		elements in		
			the soil		
	Explanatio		To familiarize		
	n and		the student		
Even	presentatio	soil	with the	F	Fourth
Exam	n of the	fertility	types of	3	Fourth
	model and		elements in		
	lecture		the soil		
	Explanatio		The student		
Even	n and	soil	should	F	\ <i>1</i>
⊨xam	presentatio	fertility	recognize the	Э	V
	n of the		necessary		

	_ _	Ţ			
	model and		elements		
	lecture				
	Explanatio				
	n and		To identify		
Exam	presentatio	soil	the major	5	Sivth
Lxam	n of the	fertility		5	Sixtin
	model and		elements		
	lecture				
	Explanatio		The student		
	n and		should be		
F	presentatio	soil	familiar with	~	Coursette
Exam	n of the	fertility	the	3	Sevenin
	model and		microelement		
	lecture		s		
	Explanatio		The student		
	n and		should be		
F	presentatio	soil	familiar with	~	- '
Exam	n of the	fertility	the	5	Eighth
	model and		microelement		
	lecture		S		
	Explanatio		T		
	n and		lo identify		
_	presentatio	soil	the useful	-	N H 4
Exam	n of the	fertility	and growth-	5	Ninth
	model and		encouraging		
	lecture		elements		
	Explanatio		The student		
	n and		should		
Exam	presentatio	soil	recognize the	~	X
	n of the	fertility	distinction	5	Х
	model and		between the		
	lecture		elements		
	Explanatio		The student		
Exam	n and	SOIL	should	5	Eleventh
	presentatio	Tertility	recognize		

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	n of the		Factors				
	model and		affecting the				
	lecture		readiness of				
			elements				
	Explanatio						
	n and		The student				
F ire a	presentatio	soil	should know	~	Turalfile		
Exam	n of the	fertility	nitrogen and	5	rwentn		
	model and		its factors				
	lecture						
			To familiarize				
	Explanatio		the student				
	n and		with				
Exam	presentatio	soil	phosphorus	~	Thirteent		
	n of the	fertility	and	5	h		
	model and		potassium				
	lecture		and their				
			factors				
	– – <i>– –</i>		To familiarize				
	Explanatio		the student				
	n and		with sulfur,				
Exam	presentatio	SOIL	calcium,	5	Fourteent		
	n of the	fertility	magnesium		h		
	model and		and trace				
	lecture		elements				
			To familiarize				
	Explanatio		the student				
	n and		with the				
	presentatio	soil	fertility				
Exam	n of the	fertility	assessment	5	Fifteenth		
	model and	-	of soil and				
	lecture		organic				
			matter				
11. Course Evaluation							
1- Theory	v tests 25						
,							

2- Practical tests 15	
3- Reports & Studies 10	
4– Final Exam 50	
12. Learning and Teaching Resources	
Soil fertility 2014 / Prof. Dr. Noureddine	Required textbooks (methodology
Shawky Ali	any)
Fertilizer technologies and their uses 2012	Main references (sources)
Prof. Dr. Noureddine Shawky Ali	
	Recommended books and
Iraqi academic scientific journals	references (scientific journals,
	reports)
Soil Science Society Of America	Electronic References, Websites
Library Genesis	

1.	Course Title:						
	Principles of the Food Industry						
2.	Course Code						
	0014	1205					
3.	Semester / First Year						
	Autumn ,	Second					
4.	Date of preparation of this description:						
	2023-	-2024					
5.	Number of Credit Hours (Total) / Number of	f Units (Total)					
	Number of credit hours (total) 75 hours						
6.	Course Administrator Name:						
	Name: M. Dr. Haidar Razzaq Laibi	Email: haiderrezaq2)17@mu.edu.iq				
7.	Course Objectives						
	Contribute to agricultural development a	Course Objectives					
	food security	This course descripti	on provides a b				
	Developing nutritional health awareness	summary of the	most import				
	the community	characteristics of the	course				
		The learning outcom	es expected of				
		student to achieve a	re proof of whet				
		he has made the me	ost of the availa				
		learning opportunities	s. It must be linl				
		to the program descr	iption.				
0							
8.	Teaching and Learning Strategies						
	Teaching and learning methods		Strategy				
1	 Explanation and clarification 						
2	– Lecture method–						
3	 Student groups- 						
4	 Practical lessons in laboratories 						

. Course Struc	cture				
Evaluation	Practic	Unit or subject	Requir	Hours	The
method	al	name	ed		week
			Learni		
			ng		
			Outco		
			mes		
Discussions	Solutio	Introduction to		2 hours	First
Exams	ns	the importance		theoreti	week
	used in	of food		cal	
	food	industries and		3 hours	
	proces	their		practica	
	sing	development		Ι	
Discussions	Birker	Food		2 hours	Second
Exams	Industr	Ingredients		theoreti	week
	у			cal	
				3 hours	
				practica	
				Ι	
Discussions	Molass	General health		2 hours	Third
Exams	es	requirements in		theoreti	week
	industr	food factories		cal	
	У			3 hours	
				practica	
				I	
Discussions	Ketchu	Food Groups		2 hours	Fourth
Exams	р			theoreti	week
	industr			cal	
	у			3 hours	
				practica	
				Ι	
Discussions	Juice	Vital activities		2 hours	Fifth
Exams	Industr	in fruits after		theoreti	week
	У	breathing		cal	
				3 hours	

			1		
				practica	
				I	
Discussions		First month		2 hours	Week
Exams		exam		theoreti	Six
				cal	
				3 hours	
				practica	
				I	
Discussions	Jam	Grain		2 hours	Week
Exams	industr			theoreti	seven
	У			cal	
				3 hours	
				practica	
				I	
Discussions	Dairy	Meat & Fish		2 hours	Week
Exams	Industr			theoreti	eight
	У			cal	
				3 hours	
				practica	
				L	
Discussions	Laborat	Chicken, tea		2 hours	Week
Exams	ory	and coffee		theoreti	Nine
	bread			cal	
	industr			3 hours	
	У			practica	
	(loofah			I	
)				
Discussions	Chees	General		2 hours	Week
Exams	е	methods of		theoreti	Ten
	making	conservation		cal	
				3 hours	
				practica	
				I	
Discussions	Cake	Food		2 hours	Week
Exams	making	Processing		theoreti	Eleven

					cal	
					3 hours	
					practica	
					I	
Discussions		Vegeta	ables		2 hours	Twelfth
Exams		and fi	uits		theoreti	week
					cal	
					3 hours	
					practica	
					I	
Discussions		Туре	s of		2 hours	Thirtee
Exams		preserv	vation		theoreti	nth
					cal	week
					3 hours	
					practica	
					I	
Discussions					2 hours	Fourte
Exams					theoreti	enth
					cal	week
					3 hours	
					practica	
					I	
		Second	month			Week
		exam				V
						ten
10. Course Eva	luation					
Distributing	the score ou	it of 100 acc	cording	to the tasks	assigned to	the student
such as dail	y preparation	n, daily, oral,	monthly	, written exa	ms, reports	etc
11. Learning an	d Teaching F	Resources				
Principles of	f food industr	y. Written	Req	uired textboo	oks (methodol	ogy, if any)
by Dr Abo	by Dr Abd Ali Mahdi Hassan.					
National Lib	rary in Bagho	dad 1380				
for the year	1979					

From methodological books, auxiliary books, the Internet and scientific research	Main references (sources)
Scientific journals in the main specializations	Recommended books and references (scientific journals, reports)
Al-Muthanna University e-learning website https://agr.mu.edu.iq/	Electronic References, Websites

1.	. Course Title:							
	Principles of horticulture							
2.	Course Code							
				0C142	06			
3.	Semester /	Year						
			SEC	COND /	Spring			
4.	The history	of preparation	of this desc	ription				
				2024				
5.	Available A	ttendance Form	S					
				Came	9			
6.	Number of	Credit Hours (T	otal) / Num	nber of L	Jnits (Total)			
		2 hours theor	retical and	3 hours	practical Number	rofι	units 3	
7.	Course adr	ninistrator's nam	ne (if more	than on	e name)			
	Name: Ass	oc. Prof. Nasse	r Habib Mu	ihaibis E	mail: naasshb@	mu.e	edu.iq	
8.	Course Ob	jectives		-	0 11 11			
	leaching the	ne student in ho	orticulture,	Cou	rse Objectives:			
0	zoning hort							
9.	leaching a	nd Learning Stra	ategies				01	
	[Explanation	on and clarificati	on				St	rategy
0	2Lecture m	ethod						
0.	Course Str				Demined			The
	Evaluatio	Learning	Unit or		Required	I	Hour	Ine
	n metnod	method	subject	name	Learning	ę	5	wee
	Desid			-h - 1	Outcomes			K
	Rapid	Lecture	Learn	about	Ineoretical		2	1
	exam		nortic	ulture	lecture			
			and					
<u> </u>	Denid	Leeture	bran		Theoretical	,	`	2
1	Rapid	Lecture	Enviror	imenta	Ineoretical		2	2

exam		L factors	lecture		
Ranid	Lecture		Theoretical	2	3
ovam	Lecture	climato	locturo	2	5
Chain		factors on the	IECIUIE		
		arouth of			
		growth of			
		norticultural			
		vegetable			
		crops			
Rapid	Lecture	Effect of soil	Iheoretical	2	4
exam		factors on the	lecture		
		growth of			
		horticultural			
		vegetable			
		crops			
First	Theoretica	Fruit trees	examinatio	2	5
month	l exam		n		
exam					
Rapid	Lecture	The effect of	Theoretical	2	6
exam		climate	lecture		
		factors on the			
		growth of fruit			
		trees			
Rapid	Lecture	The effect of	Theoretical	2	7
exam		soil factors	lecture		
		on the growth			
		of fruit trees			
Rapid	Lecture	Sexual	Theoretical	2	8
exam		reproduction	lecture		
		(seed)			
Rapid	Lecture	Asexual	Theoretical	2	9
exam		reproduction	lecture		
		(vegetative)			
Second	Theoretica	Types of	examinatio	2	10
month	l exam	vegetative	n		
exam		propagation			

Rapid	Lecture	Orname	ental	Theoretical	2	11
exam				lecture		
Rapid	Lecture	Types of		Theoretical	2	12
exam		orname	ntal	lecture		
		plant	s			
Rapid	Lecture	Medicina	I and	Theoretical	2	13
exam		aroma	tic	lecture		
		plant	s			
Rapid	Lecture	Method	s of	Theoretical	2	14
exam		reproduc	ction	lecture		
		of medic	cinal			
		and aror	natic			
		plant	s			
Rapid	Lecture	Example	s of	Theoretical	2	15
exam		medicina	I and	lecture		
		aromatic				
		plants				
11. Course Eva	aluation					
Distributing	the score out	of 100 accor	ding t	o the tasks assi	gned to the	e student
such as da	ily preparation, o	daily, oral, m	onthly,	, written exams, r	eports	etc
12. Learning a	nd Teaching Rea	sources				
ticulture and G	arden Engineeri	ng	R	equired textbooks	s (methodo	logy, if an
Iran Muhamma	d Amin					
			М	ain references (s	ources)	
			R	ecommended bo	oks and re	eferences
			(s	cientific journals,	reports)	
https://fliph	tml5.com/learni	ng-	EI	ectronic Referen	ces, Websi	tes
center/ar/1	0-delicate-gard	ening-				
magazines	-give-you-inspi	ration-for-				
gardening-	design/					

1.	Course Tit	le:						
	Principles of Agricultural Extension							
2.	Course Co	ode						
			002	2420	1			
3.	Semester	/ Year						
			Autumn	/ Se	econd			
4.	The history	y of preparation	of this description	on				
			2	024				
5.	Available A	Attendance Forr	ns					
			C	ame				
6.	Number of	Credit Hours (Total) / Number	of Ur	nits (Total)			
		2	hours theoretica	al nu	mber of units 2			
7.	Course Te	acher Name (if	more than one r	name	is mentioned)			
	Name: Ass	soc. Prof. Haide	er Hamid Balau	Ema	il: haiderblaw@r	nu.e	du.iq	
8.	Course Ob	jectives						
	Knowl	edge of agricul	tural extension,	C	Course Objective	es:		
	functions of	of administrative	organization					
	extension,	methods of ext	ension and					
	field clarific	cation						
9.	Teaching a	and Learning St	trategies					
	Audio metl	hods (teaching	explanation of th	e sul	oject)		Str	ategy
	Blackboard	d writing style						
	The metho	od of direct dia	logue between t	he te	eacher and the	stud		
	with the ev	valuation of the	student in the cl	assro	oom participation	S		
0.	Course Str	ructure						
	Evaluatio	Learning	Unit or subje	ect	Required	ł	Hour	The
	n method	method	name		Learning	5	5	wee
					Outcomes			k

Rapid	Lecture	Definition of	Theoretica	2	1
exam		guidance with	l lecture		
		its principles			
Rapid	Lecture	Objectives of	Theoretica	2	2
exam		agricultural	I lecture		
		extension			
Rapid	Lecture	Administrative	Theoretica	2	3
exam		Organization	I lecture		
		Jobs for			
		Agricultural			
		Extension			
Rapid	Lecture	Agricultural	Theoretica	2	4
exam		extension	I lecture		
		organization			
		in Iraq			
First	Theoretic	examination	examinatio	2	5
month	al exam		n		
exam					
Rapid	Lecture	Communicatio	Theoretica	2	6
exam		n as a social,	I lecture		
		educational			
		and			
		counseling			
		process			
Rapid	Lecture	Agricultural	Theoretica	2	7
exam		extension	I lecture		
		methods			
Rapid	Lecture	General rules	Theoretica	2	8
exam		in the use of	I lecture		
		indicative			
		methods			
Rapid	Lecture	Types of	Theoretica	2	9
exam		individual	I lecture		
		guidance			
		methods			

Secon	d Theoretic	ovaminatio	n	ovominatio	2	10
month		examination		examinatio	2	10
month	ai exam			n		
exam		-				
Rapid	Lecture	Group		Theoretica	2	11
exam		Guidance		I lecture		
		Methods				
Rapid	Lecture	Field		Theoretica	2	12
exam		clarificatior	n	I lecture		
		and its type	es			
Rapid	Lecture	Advantage	s	Theoretica	2	13
exam		and		I lecture		
		disadvantag	es			
		of types of	f			
		field				
		clarificatior	n			
Rapid	Lecture	Field Day and		Theoretica	2	14
exam		its benefits		l lecture		
Rapid	Lecture	Methods o	of	Theoretica	2	15
exam		mass		I lecture		
		communicat	tio			
		n				
11. Course	e Evaluation					
Distrib	uting the score out	of 100 accordi	ng to	the tasks assig	ned to the	e student
such a	s daily preparation,	daily, oral, mon	ithly, v	vritten exams, re	eports	etc
12. Learni	ng and Teaching R	esources				
Agricu	ltural Extension Sci	ence	Re	equired textbool	ks (method	ology, if a
Abdulla	ah Al-Samarrai	and Adnan				
Husse	in Al-Jadri					
Scienti	fic journals and arti	icles	M	ain references (sources)	
Specia	lized books in the	field of agricultu	Re	ecommended	books	and
extens	ion science,		re	ferences (sc	cientific	journals,
			re	ports…)		
Scienti	fic websites specia	alized in the st	El	ectronic Referer	nces, Webs	sites
of						
Extens	ion					

1.	L. Course Title : Oil and Sugar Crops						
	Oil	ly and sugary crops					
2.	Course Code						
		0024202					
3.	Semester / Year						
	Spring/second						
4.	4. The history of preparation of this description						
	2024						
5.	Available Attendance Forms						
6.	Number of Credit Hours (Total) / N	lumber of Units (Total)					
	30 Theoretical 45 Practical Total 7	5					
7.	Course administrator's name (if mo	ore than one name)					
	Name Assoc. Prof. Haider Abdul Hussain Mohsen Em						
	haider_amm3@mu.edu.iq						
8.	Course Objectives						
	1. Develop teaching curricula in	Course Objectives					
	coordination with higher	This course description provides	a b				
	departments	summary of the most important charac	cteris				
	 Develop teaching curricula by 	of the course					
	the department similar to the	The learning outcomes expected	of				
	work environment	student to achieve are proof of whether	r he l				
	 Providing the student with the 	made the most of the available	learn				
	skill in identifying plants and	opportunities. It must be linked to the	progr				
	how to grow and serve them	description.					
	 Creating a photo album 						
	showing the plants used						
	(evidence for cultivation) and						
	the environmental factors that						
	suit them						

hinder the cultivation and			
expansion of each field crop			
9. Teaching and Learning Strategies			
1 – Explanation and clarification	Strategy		
2-Lecture method-			
3-Student groups-			
4-Practical lessons in agricultural fields-			
5-Scientific trips to learn about agricultural evidence			

Even		evam	sugary	theoretical
Discussions		First month	Oily and	2 hours
				practical
Exams			sugary	theoretical
Discussions		Sesame crop	Oily and	2 hours
				practical
				3 hours
Exams		crop	sugary	theoretical
Discussions		Sunflower	Oily and	2 hours
		oil crops		
		cultivation of		practical
		facing the		3 hours
Exams		obstacles	sugary	theoretical
Discussions		Problems and	Oily and	2 hours
				practical
				3 hours
Exams			sugary	theoretical
Discussions		Oil extraction	Oily and	2 hours
				practical
		types		3 hours
Exams		sources and	sugarv	theoretical
Discussions		Oils are their	Oilv and	2 hours
	methods			
	other			
	addition to			
				practical
	and	their divisions		3 nours
⊏xams	the word	importance of	sugary	
Discussions	Inrough	Ine	Oily and	2 hours
D i i			Outcomes	
method	method	name	Learning	
Evaluation	Learning	Unit or subject	Required	Hours

11. Course Evaluation						
Distributing the score out of $100~ m accords $	rding to the tasks assigned to the stude					
such as daily preparation, daily, oral, m	nonthly, written exams, reports etc					
Theoretical tests 25 degrees						
Practical tests 15 degrees						
Reports, forms and engagement $10\ { m ma}$	Reports, forms and engagement 10 marks					
Final Exam 50 marks						
0- Learning and Teaching Resources						
Oil and sugar book	Required textbooks (methodology, if ar					
From methodological books,	Main references (sources)					
auxiliary books, the Internet and						
scientific research						
/ Scientific journals in the basic	Recommended books and reference					
specializations	(scientific journals, reports)					
	```'					
	Electronic References, Websites					
Al-Muthanna University e-						
Al-Muthanna University e- learning website						

1.	Course Name				
	Agricultural machinery and machinery				
2.	Course Code				
	0024204				
3.	Semester / Year				
	Second				
4.	The history of preparation of this description				
	2024				
5.	Available Attendance Forms				
	came				
5.	Number of Credit Hours (Total) / Number of Units (Total)				
	60 Hours / 3				
7.	Course administrator's name (if more than one name)				
	Name: Assoc. Prof. Falih Hamed Kassar Email : flaiehkassar@mu	ı.edu.iq			
8.	Course Objectives				
8.	Course Objectives         We show students the importance       Course Objectives				
8.	Course Objectives         We show students the importance understanding the basics of agricultion				
8.	Course Objectives         We show students the importance       Course Objectives         understanding the basics of agricultimachinery, such as identifying the parts       Course Objectives				
8.	Course Objectives         We show students the importance       Course Objectives         understanding the basics of agricultion       Course Objectives         machinery, such as identifying the parts       the tug, which is the main unit for ene				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculti machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as wellCourse Objectives				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculti machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowingCourse Objectives				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowing agricultural machines that carry outCourse Objectives				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowing agricultural machines that carry out preparation of the land and the serviceCourse Objectives				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowing agricultural machines that carry out preparation of the land and the service the crop.				
8.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowing agricultural machines that carry out preparation of the land and the service the crop.Teaching and Learning Strategies				
<u>8.</u> 9.	Course ObjectivesWe show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene 	Strategy			
<u>8.</u> 9.	Course Objectives       Course Objectives         We show students the importance understanding the basics of agriculte machinery, such as identifying the parts the tug, which is the main unit for ene production on the farm, as well identifying the parts of the tractor engi in addition to reviewing and knowing agricultural machines that carry out preparation of the land and the service the crop.       Image: Course Objectives         Teaching and Learning Strategies       Image: Course Objectives       Image: Course Objectives         1- Explanation and clarification 2-Lecture method-       Image: Course Objectives       Image: Course Objectives	Strategy			
9.	Course Objectives         We show students the importance       Course Objectives         understanding the basics of agriculte       machinery, such as identifying the parts         the tug, which is the main unit for ene       production on the farm, as well         identifying the parts of the tractor engi       in addition to reviewing and knowing         agricultural machines that carry out       preparation of the land and the service         the crop.       Teaching and Learning Strategies         1 - Explanation and clarification       2-Lecture method-         3-Student groups-       Stategies	Strategy			

Course Str	ucture				
Evaluatio		Unit or subject	Required	Hours	Th
n mothod	mothod		Loarning	riours	
n metrioù	method	name	Outcomos		e
			Outcomes		vv
					k k
	Came	Watching	Means of	2theoretical	 Fi
Written ex	Came	agricultural	transmissi	2 Practical	
Witten ext		tractors and	on		
		aetting to know	general		
		their main parts	descriptio		
		and an	n of		
		overview of	agricultur		
		bow they work	al		
		now they work	tractors		
			types and		
			narts		
	Came	The most	Tractor	2theoretical	S
	Camo	important	engines	2 Practical	ec
		methods and	(general		or
		means used in	descriptio		d.
		the	n –		ŭ
		transmission	identificati		
		and conversion	on of		
		of movement	fixed and		
		and energy in	moving		
		agricultural	narts in		
		machinery and	the		
		machinery	engine)		
Written	Came	Watching clins	Installatio	2theoretical	Tł
exam	Came	of the engines	n of a	2 Practical	ire
o,um		and how they	four-		n
		work with the	stroko		
		prosontation of	intornal		

		(3D) videos to	combustio		
		familiarize the	n engine		
		student with the			
		engine in detail			
Written	Came	Practical	Fuel	2theoretical	Fo
exam		viewing of the	system in	2 Practical	urt
		fuel system in	the		h
		the engine	engine		
		(gasoline –	(gasoline		
		diesel)	- diesel)		
Written	Came	Practical	Engine	2theoretical	V
exam		viewing of the	cooling	2 Practical	
		cooling system	system		
		in the engine			
		with the display			
		of video clips (			
		3D)			
Written	Came	Practical	Engine	2theoretical	Si
exam		viewing of the	lubrication	2 Practical	xt
		lubrication	system		h
		system in the			
		engine with			
		video clips ( 3D			
		)			
Written	Came	Practical	Transmiss	2theoretical	S
exam		viewing of the	ion	2 Practical	ev
		transmission	devices in		en
		devices in the	the		th
		tractor	agricultur		
		(separator –	al tractor		
		speed box)	(separator		
			- speed		
			box)		
Written	Came	Practical	Transmiss	2theoretical	Ei
exam		viewing of the	ion	2 Practical	gh

	-				
		transmission	devices in		th
		devices in the	the		
		agricultural tug	agricultur		
		(differential	al tug		
		device – final	(differenti		
		transmission	al device		
		device)	– final		
			transmissi		
			on		
			device)		
Written	Came	Practical	Soil	2theoretical	Ninth
exam		observation of soil	preparation	2 Practical	
		preparation	equipment		
		equipment	(primary)		
		(primary) through			
		a field tour and			
		identification of the			
		types of			
		equipment			
Written	Came	Practical viewing	Soil	2theoretical	Х
exam		of soil preparation	preparation	2 Practical	
		equipment	equipment		
		(secondary)	(secondary)		
		through a field			
		tour and			
		identification of the			
		types of			
		equipment			
Written	Came	Practical viewing	Sowing and	2theoretical	Eleve
exam		of sowing and	farming	2 Practical	nth
		farming equipment	equipment		
Written	Came	Practical viewing	Fertilization	2theoretical	Twelf
exam		of fertilization	equipment of	2 Practical	th
		equipment of all	all kinds		
		kinds			

	1	1		1	T	n
Written	Came	Practical view	wing	irrigation	2theoretical	Thirt
exam		of irrigation		equipment	2 Practical	eenth
		equipment				
Written	Came	Practical view	of	Agricultural	2theoretical	Fourt
exam		agricultural pe	est	Pest Control	2 Practical	eenth
		control equipr	nent	Equipment		
Written	Came	Practical view	wing	Reaping and	2theoretical	Fiftee
exam		of harvesting	and	harvesting	2 Practical	nth
		harvesting		equipment		
		equipment an	d			
		identifying its	parts			
11. Course	Evaluation			<u> </u>		
Distributing	the score out	of 100 accordii	ng to t	he tasks assign	ed to the stude	nt such
as daily pre	eparation, daily	, oral, monthly,	writter	n exams, reports	s etc	
Theoretical tests 25 degrees						
Practical te	sts 15 degrees	i				
Reports, for	rms and engag	ement 10 mark	s			
Final Exam	50 marks					
Learning ar	nd Teaching Re	esources				
Oil and sug	ar book		Requ	ired textbooks (	methodology, if	any)
From 1	methodologica	al books,	Main references (sources)			
auxiliary	books, the	Internet and		, ,	,	
scientific r	esearch					
/ Scientifi	c journals i	n the basic	Recommended books and references			erences
specializat	ions		(scier	ntific journals. re	eports)	
-1			(	- ,	,)	
Al-Mutha	nna Universit	v e-learning	Elect	ronic Reference	s. Websites	
website		,			-,	
https://agr	mu.edu ia					
mpo.//ugi	marodany					

Course Title:								
		Princip	les of St	atistics				
Course Code								
			0C24203	6				
Semester / Y	ear							
	SECOND / Spring							
The history of	The history of preparation of this description							
			2024					
Available Atte	endance Forms							
			Came					
Number of Cr	edit Hours (To	tal) / Numbe	er of Unite	s (Total)				
	2 hours theo	retical and 3	hours pr	actical Number of un	its 3			
Course admir	nistrator's name	e (if more tha	an one na	ame)				
Name: Assoc	. Prof. Haider	Hamid Balau	u Email: I	naiderblaw@mu.edu.	iq			
Course Object	tives							
Teaching the	student in sta	atistics and	Course	Objectives:				
how to	extract mea	sures of						
concentration	and dispersior	ו						
Teaching and	Learning Stra	tegies						
					Stra	ategy		
1Explanation	and clarificatio	n						
2Lecture met	hod							
Course Struct	ture							
Evaluation	Learning	Unit or sub	ject	Required Learning	Hours	The		
method	method	name		Outcomes		week		
Rapid exam	Lecture	Statistics a	nd its	Theoretical lecture	2	1		
		developme	nt					
Rapid exam	Lecture	Nature of		Theoretical lecture	2	2		
		statistical d	ata and					

		symbols				
Rapid exam	Lecture	Tabular view and	Theoretical lecture	2	3	
		graph				
Rapid exam	Lecture	Metrics of	Theoretical lecture	2	4	
		concentration from				
		uncategorized				
		data				
First month	Theoretical	examination	examination	2	5	
exam	exam					
Rapid exam	Lecture	Metrics of	Theoretical lecture	2	6	
		concentration from				
		tabbed data				
Rapid exam	Lecture	Measures of	Theoretical lecture	2	7	
		dispersion and				
		variation				
Rapid exam	Lecture	Probability theory	Theoretical lecture	2	8	
Rapid exam	Lecture	Know the laws of	Theoretical lecture	2	9	
		probability				
Second	Theoretical	examination	examination	2	10	
month exam	exam					
Rapid exam	Lecture	Continuous	Theoretical lecture	2	11	
		probability				
		distributions for				
		normal distribution				
Rapid exam	Lecture	Hypothesis testing	Theoretical lecture	2	12	
		<ul> <li>part one</li> </ul>				
Rapid exam	Lecture	Hypothesis testing	Theoretical lecture	2	13	
		– part two				
Rapid exam	Lecture	Simple and	Theoretical lecture	2	14	
		multiple link				
Rapid exam	Lecture	The concept of	Theoretical lecture	2	15	
		regression and the				
		measurement of				
		the regression				
		coefficient				
Course Evaluation						
-------------------------------------------------------------------------	-------------------------------------------	--	--	--	--	--
Distributing the score out of 100 according	to the tasks assigned to the student such					
as daily preparation, daily, oral, monthly, w	ritten exams, reports etc					
. Learning and Teaching Resources						
uction to Statistics	Required textbooks (methodology, if any)					
a Mahmoud Alrawi						
	Main references (sources)					
	Recommended books and references					
	(scientific journals, reports)					
https://books-library.net/c-Statistics- Electronic References, Websites						
best-download						

Course Name	
Irrigation and Drainage	
Course Code	
0C24205	
Semester / Year	
Spring Semester / Second	
The history of preparation of this description	
2024	
Available Attendance Forms	
Came	
Number of Credit Hours (Total) / Number of Units (Total)	
2 Theoretical 2 Practical Modules 3	
Course administrator's name (if more than one name)	
Name: Dr. Ola Hussein Ali Email: Aula.alobeidi@mu.edu.iq	
Course Objectives	
Research in the science of irrigation, its sources, methods Course	Objectives
control, exploitation and delivery to agricultural fields	
Study the evaluation of the quality of irrigation water and	
suitability for irrigation.	
Know how to plan, design and implement irrigation facilities	
Investigates the relationship of water to soil and	
movement of water in the soil and the tip of water	
Calculation of plant water consumption, water requirement	
irrigation scheduling in addition to irrigation wa	
measurements	
It examinesDrainage, excess water sources, the relations	
ofDrainage to plant growth and productivity, soil salinity,	
balance and washing requirements.	
Teaching and Learning Strategies	
1- Explanation and clarification Str	rategy
2- Lecture method	

<ul> <li>4- Practical lessons in agricultural fields</li> <li>5- Scientific trips For specialized departments and</li> <li>research stations</li> </ul>	
5- Scientific trips For specialized departments and research stations	
research stations	
6- Self-learning method	
Course Structure	
Evaluation Learning Unit or subject Required Hours The	week
method method name Learning	
Outcomes	
The concept of	
Explanation irrigation,	
and irrigation water	
Exam presentation sources, physical 4 Th	The first
of the model soil properties	
and lecture associated with	
irrigation	
Explanation Irrigation	
and andDrainage	Second
Exam presentation 4 Se	
of the model	
and lecture	
Explanation Irrigation The relationship	
and andDrainage of water to the	
Exam presentation soil Soil moisture, 4	Гhird
of the model the movement of	
and lecture water in the soil	
Explanation Irrigation	
and andDrainage	
Exam presentation 4 F	ourth
of the model	
and lecture	
Explanation Irrigation Plant Water	
and andDrainage Consumption,	V
presentation 4 Water Needs and 4	V
of the model Watering	

	and lecture		Scheduling		
		Irrigation	Transmission and		
	Explanation	andDrainage	distribution of		
		andDrainage	irrigation water		
Evom	procontation		movement of	Λ	Sixth
Exam	of the model			4	Sixui
			water in pipes		
	and lecture				
	Evalenation	Irrigation			
	Explanation	Irrigation	Adequacy and		
_	and	andDrainage			0 "
Exam	presentation		irrigation and	4	Seventh
	of the model		consistency of		
	and lecture		irrigation		
	Explanation	Irrigation			
_	and	andDrainage	Traditional		
Exam	presentation		irrigation methods	4	Eighth
	of the model				
	and lecture				
	Explanation	Irrigation			
	and	andDrainage	Modern irrigation		
Exam	presentation		methods	4	Ninth
	of the model				
	and lecture				
	Explanation	Irrigation	The concept		
	and	andDrainage	ofDrainage		
Exam	presentation			4	Х
	of the model		water		
	and lecture		water		
	Explanation	Irrigation	The relationship		
	and	andDrainage			
Exam	presentation			4	Eleventh
	of the model				
	and lecture		productivity		
Evon	Explanation	Irrigation	Puncture and soil	Λ	Twelfth
Exam	and	andDrainage	salinity, washing	4	

				11 h - l		
	presentation		and sa	lit balance		
	of the model		requi	rements		
	and lecture					
	Explanation	Irrigation				
_	and	andDrainage	Types of	of trocars :		
Exam	presentation		open	trocars,	4	Thirteenth
	of the model		covere	ed trocars		
	and lecture					
		Irrigation	Dist	ribution		
	Explanation	andDrainage	pattern	s of trocar		
	and		netw	ork The		
Exam	presentation		distanc	e between	4	Fourteenth
	of the model		trocar	s and the		
	and lecture		mainte	enance of		
			tro	ocars		
					4	Fifteenth
. Course Eva	aluation					
1- The	ory tests 25					
2- Prae	ctical tests 15	5				
3- Rep	orts & Studies	10				
4- Final Ex	am 50					
. Learning ar	nd Teaching Res	sources				
1- Irrigation	n Basics and Ap	plications Written	by Dr.	Required t	extbook	s (methodol
Nabil Ibrahi	im Al-Taif and D	r. Essam Khudai	r	if any)		
Hamza Al-	Hadithi 1988					
Ministry of	Higher Educatio	n and Scientific				
Research -	- University of Ba	aghdad.				
2- Irrigation	n andDrainage b	y Dr. Laith Khalil	Ismail			
2000 Minis	try of Higher Ed	ucation and Scien	tific			
Research -	- University of M	osul				
3-Drainage	e (investigations,	designs, impleme	entation			
and mainte	nance). Dr. Mol	hsen Muhareb Av	vad Al-			
Lami and Dr. Alaa Saleh Abdul-Jabbar Al-Janabi						
Irag. Ministry of Higher Education and Scientific			Janabi.			
Iraq. Minis	try of Higher I	Education and S	cientific			

1-1- Irrigation basics and applications written by	Main references (sources)
Dr. Nabil Ibrahim Al-Taif and Dr. Essam Khudair	
Hamza Al-Hadithi 1988Ministry of Higher Education	
and Scientific Research – University of Baghdad	
2- Modern irrigation technologies and other topics	
in the water issue Written by Dr. Essam Khudair	
Al-Hadithi, Dr. Ahmed Madloul Al-Kubaisi and Dr.	
Yas Khudair Hamza Al-Hadithi 2010 Ministry of	
Higher Education and Scientific Research - Anbar	
University	
3- Irrigation andDrainage by Dr. Laith Khalil Ismail	
2000 Ministry of Higher Education and Scientific	
Research – University of Mosul	
	Recommended books and
Iraqi academic scientific journals	references (scientific journals,
	reports)
Soil Science Society Of America	Electronic References, Websites
Library Genesis	

Course Title:	
Plant classifica	ation
Course Code	
0C24206	
Semester / Year	
The second	t
Date of preparation of this description:	
2023-2024	4
Number of Credit Hours (Total) / Number of Units	(Total)
Number of credit hours (total) 75 hours	
Course Administrator Name:	
Name: A. d. Qasim Ajel Shanawa En	nail: qasim.ajel@mu.edu.iq
Course Objectives	
1- Plant taxonomy is one of the important scier	ncesourse Abjectivestudents to the
types of field and economic crops	This course description provides
and their description	brief summary of the most impor
2. Knowledge of plant characteristics adopted a	s advaractaristications in opram
diagnosis	The learning outcomes expected
3- Knowledge of scientific names and taxonom	ic hankstudent thosichingutate proof
plant families, which include many types of field	cwhether he has made the most
	the available learning opportunities
	must be linked to the progr
	description.
Teaching and Learning Strategies	
1 – Explanation and clarification	Strategy
2- Lecture method	
2 - Student groups	
5- Student groups	
4- Practical lessons in laboratories	

Course Struc	ture				
Course Struc Evaluation method Discussions Exams	Practical Practical Study of the vegetative characteristics of the plant: roots – sphenoid root system – identification of forms of wedge roots – adventitious root system – identification of forms of adventitious root system – identification of forms of adventitious root system – identification of forms of adventitious roots (through the presentation of models of the roots of	Unit or subject name History of plant taxonomy – Introduction to taxonomy – Reliable traits as a basis for plant classification – Steps of the classification process – The relationship of plant taxonomy with other sciences	Required Learning Outcome s	Hours 2 hours theoretical 3 hours practical	The week First week
	in addition to the means of illustration)				
Discussions Exams	Study of stems – types of stems according to the direction of growth – aerial	Classification systems – artificial classification system – natural classification		<ul><li>2 hours</li><li>theoretical</li><li>3 hours</li><li>practical</li></ul>	Secon d week

	Γ		r	Γ	r
	stems (and	system –			
	identify different	evolutionary			
	forms of them)	classification			
	<ul> <li>ground stems</li> </ul>	system –			
	(identification of	scientific			
	different	nomenclature -			
	shapes) and	controls and			
	conduct field	laws of scientific			
	observation to	names -			
	identify the	classification			
	types of stems.	ranks			
Discussions		Proliferative		2 hours	Third
Exams	Identify the	characteristics -		theoretical	week
	types of flowers	Flower – Flower		3 hours	
	by conducting	parts –		practical	
	field	Arrangement of			
	observation of	floral organs on			
	the different	the flower takht			
	flowers found in	<ul> <li>Flower</li> </ul>			
	the wooden	symmetry –			
	canopy and the	Number of flower			
	greenhouse,	rings and			
	collecting	number of parts			
	models and	of one ring –			
	bringing them	Union and			
	to the	separation of			
	laboratory for	flower organs –			
	diagnosis.	Floral quadrature			
		<ul> <li>Spur flowers</li> </ul>			
Discussions	Identify different	Pink cup – Pink		2 hours	Fourth
Exams	forms of goblet	cup shapes -		theoretical	week
	leaves -	Functions of the		3 hours	
	identify different	cup – Pink		practical	
	forms of petal	corolla – Pink			
	leaves - by	corolla shapes -			

	collecting the largest possible number of different flowers as well as identify the floral symmetry practically	Classification of corolla according to floral symmetry – Separate leaf corolla (radial symmetry and symmetry sides) – Cocoilette (radial symmetry and symmetry sides)		
Discussions Exams	Papers: Study of the parts of the leaf – arrangement of the leaves on the stem – types of leaves – shapes of the leaf blade – shapes of the top of the blade – shapes of the base of the blade – shapes of the edge of the blade – and identify the types of leaves and their shapes through field observation and	Male syphilis – stamens – matk – threads – stamens lengths – fertile stamens and sterile stamens – union and separation of stamens – union of stamens with other floral organs – contact of the anther with the thread – opening of the anther – forms of pollen – pollen shape – the outer surface of the pollen	2 hours theoretical 3 hours practical	Fifth week

	the laboratory.			
Discussions		Syphilitic female	2 hours	Week
Exams		system -	theoretical	Six
		Division of the	3 hours	
		feminine device	practical	
		according to the		
	Leaf sweating:	number and		
	reticular	nature of the		
	sweating -	crabble – pistil –		
	parallel	stigma – shapes		
	sweating -	of the stigma -		
	surface	pen – pen		
	covering of the	shapes - the		
	leaf – atria –	relationship of		
	forms of atria -	the pen with the		
	leaf mutations -	ovary – ovary –		
	forms of	Al-Tamisham -		
	mutation - leaf	forms of AI-		
	survival – and	Tamisham –		
	identification by	Determining the		
	bringing	number of		
	samples of	compound pistil		
	plants during	crabble -		
	field	ovarian location		
	observation to	<ul> <li>eggs – their</li> </ul>		
	the laboratory	composition -		
	and studying	Classification of		
	their fine details	eggs according		
		to the method of		
		connection of the		
		umbilical cord to		
		the body of the		
		egg		
Discussions	First month	First month	2 hours	Week
Exams	exam	exam	theoretical	seven
				1

			3 hours	
			practical	
Diagunationa	O an duration of			
		Floral systems –	2 nours	vveeк
Exams	scientific trip to	classification of	theoretical	eight
	the agricultural	flower systems -	3 hours	
	research	limited	practical	
	stations in the	inflorescences -		
	college and to	unlimited		
	the agricultural	inflorescences -		
	areas outside	mixed		
	the governorate	inflorescences -		
	to identify wild	special		
	and cultivated	inflorescences -		
	plants	flower equation		
Discussions	Fruits: Study of		2 hours	Week
Exams	the composition		theoretical	Nine
	of the fruit –		3 hours	
	classification of		practical	
	fruits – types of	Gymnosperms:		
	simple fruits	order of cycades		
	(soft fruits and	– order Ginkgo –		
	their types -	order of conicals		
	dry fruits and	(coniferous		
	their types) -	family - family -		
	fruits gathered	family of		
	<ul> <li>multiplied</li> </ul>	cypress) – order		
	fruits - and	of Aladidae		
	identify them by	(family of Alid)		
	presenting	· · · /		
	models of			
	different types			
	of fruits			
Discussions	Seeds: Study of	Angiosperms	2 hours	Week
Exams	the structure	(flowering	theoretical	Ten
	and parts of the	plants): I-	3 hours	

	seed - the	Monocotyledono	 practical	
	signs and	us class- Order		
	surface	of Bandanidae		
	topography of	(Papyrus		
	the seeds - the	family)- Order of		
	shapes of the	Hallubias		
	surface of the	(Shepherd's flute		
	seed - the	family)- Order of		
	external shape	Grasses (Grass		
	of the seed -	family – Saadian		
	and identify	family)- Order of		
	them by	Nakhliyat (palm		
	watching them	family)		
	by light			
	microscopy			
Discussions	Herbarium		2 hours	Week
Exams	Herbarium :		theoretical	Eleven
	Definition of	Order Lilies (Lilv	3 hours	
	Herbarium -	family –	practical	
	Tabulation	narcissistic		
	system in	family – Susanid		
	Herbarium	family) – Orchid		
	(arrangement of	order (Orchid		
	plant specimens	family) –		
	within the	Dicotvledonous		
	herbarium) –	class – Sawariat		
	General group	order (Casuaria		
	(according to	family) – Willow		
	four different	order (willow		
	taxonomic	family) – Order		
	systems) –	Fires (Tuitida		
	Special groups	family)		
	(style group –	- ,,		
	summary group			
	<ul> <li>Special</li> </ul>			

	research group				<u> </u>
	collection) –				
	Herbarium				
	functions				
Discussions	Identify the			2 hours	Twelft
Exams	tools used in			theoretical	h
	the collection			3 hours	week
	and preparation	Order of seed		practical	
	of plant	centers			
	samples for	(Ramramian			
	preservation in	, family) – Order			
	the herbarium	of fraternities			
	(notebook –	(sister family) -			
	magnifying	Order of poppies			
	glass – cans or	(poppy family –			
	trays – camera	cruciferous			
	- drilling tools -	family) – Order			
	sharp knife -	of rosaceae			
	containers for	(pink family –			
	keeping	legume family) -			
	samples -	Order of			
	small field	neighbors			
	press) –	Diaries (flaxen			
	addressing the	family -			
	important points	Stephaniaceae			
	to be taken into	family – Suspian			
	account when	family)			
	collecting plant	,			
	models of the				
	herbarium				
Discussions	Conducting a	Order of		2 hours	Thirtee
Exams	scientific trip to	Burgundies		theoretical	nth
	agricultural and	(Sidra family –		3 hours	week
	wild areas for	Blueberry family)		practical	
	L	- /	L	L	1

	Receiving plant samples prepared by students for the purpose of evaluating them and giving them the appropriate grade	Order of Curbits (olive family) – Order of tubes (oral family – Solanaceae family) – Cucurbitaceae (cucurbitaceae family) – Order of Naqsidae (compound		Week V ten
Exams	Second month exam	Second month exam	2 nours theoretical 3 hours practical	enth week
	the purpose of collecting plant models by students and pressing them and applying scientific standards in preparing the plant sample and handing it over to the subject professor	<ul> <li>Order of marshmallows (Marshmallow family) - Order</li> <li>of Asiats (Henna family - Roman</li> <li>family - Asian</li> <li>family) - Order</li> <li>of Khaymiyat</li> <li>(Khaymia family)</li> </ul>		

. Learning and Teaching Resources			
Classification of seed plants	Required textbooks (methodology, if any)		
From methodological books, auxiliary	Main references (sources)		
books, the Internet and scientific			
research			
Scientific journals in the main	Recommended books and references		
specializations	(scientific journals, reports)		
Al-Muthanna University e-learning	Electronic References, Websites		
website			
https://agr.mu.edu.iq/			

Field crop insects				
Course Code				
0014303				
Semester / Year				
Autumn/third				
The history of preparation of this description				
2024				
Available Attendance Forms				
In classrooms and agricultural	fields			
Number of Credit Hours (Total) / Number of Units (Total)				
2+2				
Course administrator's name (if more than one name)				
Name: Dr. Lafta Awad Atshan Email: lafta.awad@mu.edu.iq				
Course Objectives				
Provide a new job opportunity for graduates	Course Objectives			
To work in pest control companies or operate offices				
Domestic or insect control				
Infects agricultural crops				
Teaching and Learning Strategies				
1 – Explanation and clarification		Strategy		
2- Lecture method				
3- Student groups				
4- Practical lessons in laboratories				

Course Structure					
Evaluation method	Learning	Unit or subject name	Required	Hours	The
			Learning		week
			Outcomes		
Discussions	lecture	Historical view of insects		4	1
Exams		Insects of cereal crops	Theoretical	4	2
		Corn bugs	and	4	3
		Aphids	practical	4	4
		Sesame insects		4	5
		Sunflower insects		4	6
		Legumes		4	7
		Diabetic beet insects		4	8
		Cotton insects		4	9
		Earth bug		4	10
		Mites.		4	11
		locusts		4	12
		Insect pest control		4	13
		The benefits and harms		4	14
		insects		4	15
		Methods of using pesticides			
. Course Evaluation					
Distributing the scor	e out of 100	according to the tasks assigne	ed to the stud	ent such a	s daily
preparation, daily, o	ral, monthly,	written exams, reports etc			
. Learning and Teach	ing Resource	S			
Field crop insects			Required textbo		
			(methodology, if any)		
Crop insects - the t	heoretical and	d practical part	Main references (sources)		
Prepared by Dr. Hu	ssein Ali Mut	ni Al-Anbaki			
College of Agricultur	re, Diyala Uni	iversity			
			Recommen	ded books	s and
			references	(sc	ientific
			journals, rep	oorts…)	
YouTube sites			Electronic F	References,	Websi

Course Name						
Fodder crops						
Course code theoretical						
0014306						
Semester / Year						
Autumn / Third						
The history of preparation of this description						
2/2/2024						
Available Attendance Forms in Presence + Electronic	>					
Number of Credit Hours (Total) / Number of Units (T	otal)					
75 hours						
Course administrator's name (if more than one name	)					
Name: Mahmoud Thamer Abdel Emil : Mohmoodth9	99@mu.edu.iq					
Course Objectives						
Learn about crop science field Know Course O	ojectives					
principles of this botany						
The importance of this science and						
identification of the most important p						
families						
Study of the output of fodder crops						
Teaching and Learning Strategies						
1 – PowerPoint presentation via the data show scre	en	Strategy				
2- Electronic presentation through communication pl	atforms					
3 – The method of direct delivery and detailed explanation						
Course Structure						
Evaluation Learning Unit or subject name	Required	Hours The				

method	method		Learning		week
			Outcomes		
Oral exams	Lecture	The importance of livest	Memorization,	2	1
	and	and the importance of fod	understanding,		
	discussion	crops in meeting that need	practical		
			application		
Rapid	Lecture	Factors affecting feed	Memorization,	2	2
exam	and	production and quality	understanding,		
	electronic		practical		
	discussion		application		
Oral	Lecture	Production of leguminous	Memorization,	2	3
exams	and	fodder crops (jet)	understanding,		
	electronic	importance. Production	practical		
	discussion	Circumstances	application		
Rapid	Lecture	Clover (same vocabulary	Memorization,	2	4
exam	and	as Jet)	understanding,		
	electronic		practical		
	discussion		application		
Oral	Lecture	(Hertman, Kart, Kakuz) the	Memorize,	2	5
exams	and	same vocabulary	understand,		
	electronic				
	discussion				
Rapid	Lecture	Production of grass crops	Memorization,	2	6
exam	and	(yellow corn) and the	understanding,		
	electronic	importance of fodder	practical		
	discussion	production includes the	application		
		foundations of production			
Written	Electronic	White corn and Sudanese	Memorization,	2	7
exam	written	hashish (same vocabulary)	understanding,		
	exam		practical		
			application		
Rapid	Lecture	Barley, oats, millet)	Memorization,	2	8
exam	and	importance/production/feed	understanding,		
	electronic	uses	practical		
	discussion		application		

	•						
Oral	Lecture	Concentrated feed		Memorization,	2	9	
exams	and	materials are impor	tant in	understanding,			
	electronic	nutrition		practical			
	discussion			application			
Rapid	Lecture	Feed mixtures (defi	inition –	Memorization,	2	10	
exam	and	importance - types		understanding,			
	electronic			practical			
	discussion			application			
Oral	Lecture	The dress is a tarif	f and its	Memorization,	2	11	
exams	and	importance		understanding,			
	electronic			practical			
	discussion			application			
Rapid	Lecture	The torrent is a tari	iff and	Memorization,	2	12	
exam	and	its importance		understanding,			
	discussion			practical			
				application			
Oral	Lecture	Pastures are impor	tant	Memorization,	2	13	
exams	and	and their types		understanding,			
	electronic			practical			
	discussion			application			
Rapid	Lecture	Foundations of		Memorization,	2	14	
exam	and	Quantitative Evalua	ition of	understanding,			
	electronic	Pasture Plants		practical			
	discussion			application			
Written	Written	Causes of natural p	oasture	Memorization,	2	15	
exam	exam	degradation		understanding,			
				practical			
				application			
. Course Eva	luation						
Distributing	the score ou	t of 100 according to	o the task	s assigned to the	e studen	t such	
as daily pre	paration, dail	y, oral, monthly, writ	ten exam	s, reports etc	;		
. Learning an	d Teaching F	Resources					
. Fodder cro	ops/Hamid K	harbit	Require	d textbooks (metl	nodology	/, if any	
1. Producti	on of fodde	r crops / Ahmed A	Main rel	ferences (sources	s)		
Najah	Najah						

- Iraqi Journal of Agriculture Recommended books and reference	Recommended books and references		
- Journals and research concerned with this (scientific journals, reports)			
All Agricultural Journals and Plant Pathol Electronic References, Websites			
Journals			

Course Title:				
Fiber crops				
Course Code				
	0014307			
Semester / Year				
Α	utumn / Third			
Date of preparation of this description:				
	2023-2024			
Number of Credit Hours (Total) / Number	of Units (Total)			
Number of credit hours (total) 75 hours				
Course Administrator Name:				
Name: A.M.D.Haidar Razak Luaibi Ema	il: haiderrezaq2017@mu.edu.iq			
Course Objectives				
Preparing researchers in the field of fi	fi Course Objectives			
technology,	This course description provides a	brie	ef summary	
Preparing specialists to work in tex	the most important characteristics of	of th	e course	
companies,	The learning outcomes expected	of t	he student	
Preparing graduates for postgradu	achieve are proof of whether he ha	as m	ade the m	
studies in the field of fiber production a	of the available learning opportur	nities	s. It must	
technology.	linked to the program description.			
Leaching and Learning Strategies				
Teaching and learning methods		Stra	ategy	
1- Explanation and clarification				
2- Lecture method				
3- Student groups				
4- Practical lessons in laboratorie	95			

Course Strue	cture				
Evaluation	Practical	Unit or	Required Learning	Hours	The
method		subject	Outcomes		week
		name			
Discussions	Botanical	Division of		2 hours	First
Exams	description of	fiber crops		theoreti	week
	cotton			cal	
				3 hours	
				practical	
Discussions	Types of fertilizers	Obstacles		2 hours	Secon
Exams	used and types of	to the		theoreti	d week
	bushes spread in	production		cal	
	cotton fields and	and		3 hours	
	ways to combat	cultivation		practical	
	them	of fiber			
		crops and			
		ways to			
		overcome			
		them			
Discussions	Favorable	Chemical		2 hours	Third
Exams	environmental	compositio		theoreti	week
	conditions for	n of		cal	
	cotton growth	cotton		3 hours	
		fibers		practical	
Discussions	Service operations	Natural		2 hours	Fourth
Exams	for cotton crop	properties		theoreti	week
		of cotton,		cal	
		length		3 hours	
				practical	
Discussions	Growth regulators	Durability,		2 hours	Fifth
Exams	and reaping	Durability		theoreti	week
	operations	Estimation		cal	
		Methods		3 hours	
				practical	
Discussions		First		2 hours	Week

Exams		month	theoreti	Six
		exam	cal	
			3 hours	
			practical	
Discussions	Dryers and	Elongation	2 hours	Week
Exams	ginning processes	, softness	theoreti	seven
	for cotton	and	cal	
		maturity	3 hours	
			practical	
Discussions	Botanical	Rank, twirl	2 hours	Week
Exams	description of the	and	theoreti	eight
	linen family	influencing	cal	
		factors	3 hours	
			practical	
Discussions	Service operations	Knots and	2 hours	Week
Exams	for flax crop	appearanc	theoreti	Nine
		e, color,	cal	
		gloss	3 hours	
			practical	
Discussions	Stages of	Methods	2 hours	Week
Exams	preparation and	for	theoreti	Ten
	processing of flax	calculating	cal	
	fibers	the	3 hours	
		moisture	practical	
		content of		
		cotton		
		bristles		
Discussions	Cannabis, bowler	Post-	2 hours	Week
Exams	and Manchurian	weaving	theoreti	Eleven
	jute	preparator	cal	
		У	3 hours	
		processes	practical	
Discussions	Dryers and	Elongation	2 hours	Twelfth
Exams	ginning processes	, softness	theoreti	week
	for cotton	and	cal	

[		[					
		maturity		3 hours			
				practical			
Discussions	Botanical	Rank, twirl		2 hours	Thirtee		
Exams	description of the	and		theoreti	nth		
	linen family	influencing		cal	week		
		factors		3 hours			
				practical			
Discussions				2 hours	Fourte		
Exams				theoreti	enth		
				cal	week		
				3 hours			
				practical			
		Second			Week		
		month			V		
		exam			ten		
. Course Eval	uation						
. Learning and	d Teaching Resource	s					
Fiber crops	. Written by Dr. Iyad	Require	Required textbooks (methodology, if any)				
Talaat Shak	er. Ministry of Higher						
Education a	nd Scientific Researc	h					
From me	thodological bool	ks, Main re	Main references (sources)				
auxiliary bo	ooks, the Internet a	nd					
scientific research							
Scientific j	ournals in the ma	ain Recomr	Recommended books and references (scientific				
specializatio	ons	journals	, reports)				
Al-Muthan	na University	e- Electron	ic References, Websites				
learning we	bsite						
https://agr.n	nu.edu.iq/						

1. Course Name								
Gene	General inheritance							
2. Course Code								
	001430							
3. Semester / Year								
Au	tumn / Third							
4. The history of preparation of this des	cription							
2	6/02/2024							
5. Available Attendance Forms								
	Came							
6. Number of Credit Hours (Total) / Num	nber of Units (Total)							
75 hours (30 theoretical + 45 practical)	/ 3 units							
Course administrator's name (if more the	an one name)							
Name: Assoc Prof Muhammad	Hussein Noor Hassan Alsalami Email							
mohammad noor@mu.edu.ig								
monaminad.noor@md.cdd.iq								
Course Objectives								
Training students on the application of	Course Objectives							
the basic laws of Mendelian	,							
inheritance, and testing the conformity								
of results with Mendel's laws using								
genetic hypotheses using the chi-								
square test								
Identify some genetic concepts such								
as genetic interaction, genetic transit,								
association, and others								
Teaching students the concepts of								
cytoplasmic genetics and illiterate								
effects								
Teaching students the basic principles								
of clan inheritance								

Taaabiaa at	udanta tha a	anaanta of					
reaching su	udents the c	oncepts of					
quantitative of							
	L oprning Stra	togios					
		legies			Str	atoqu	
* The studen	017	ategy					
* The student is introduced to the concept of genetics							
linoago			3 14103 4110				
* The stude	ont can solve e	varcisas in t	the field of	appetics using M	and		
laws and m	ake sure that t	he results n	natch Mend	el's laws using th			
square test				cro laws using th			
* The stude	ent should be	trained to	apply the	most important of	nen		
concepts in t	ne laboratory						
* The studer	nt should know	the most in	mportant ar	plications of gene	etics		
the field of nl	ant breeding a	nd improvem	ent	production of going			
B – Skills obi	ectives of the o	course.					
* Train the s	student to solve	e exercises u	ısina Mende	el's laws			
* Enabling	students to us	se the difference	ent techniai	ues used in the f	ield		
dependence	on genetic mat	erial and ger	netic variatio	on between plants			
* Training s	tudents on the	use of gen	etic concep	ts in plant breedir	nga		
improvement		U		·	0		
Course Struc	ture						
				Required			
Evaluation	Learning	Unit or sub	ject name	Learning	Hours	The	
method	method			Outcomes		week	
Oral exams	Lecture and	Plant hered	lity	Genetics and	5	1	
	discussion			its			
				development			
				and the			
				relationship of			
				genetics with			
				other sciences			
Rapid exam	Lecture and	Plant hered	lity	Introducing the	5	2	
	discussion			student to			
	ê						

			Mendelt's first		
			law, Mendel's		
			second law,		
			definition of		
			genetic terms		
Oral exams	Lecture and	Plant heredity	The student	5	3
	discussion		should know		
			the types of		
			genetic action		
Rapid exam	Lecture and	Plant heredity	Genetic	5	4
	discussion		hypothesis and		
			good		
			conformity test		
			(chi-square)		
			with Mendelian		
			lineage		
Oral exams	Lecture and	Plant heredity	To learn about	5	5
	discussion		sex		
			determination		
			systems in		
			living		
			organisms,		
			sex-related		
			heredity		
Rapid exam	Lecture and	Plant heredity	Gender-	5	6
	discussion		specific		
			heredity,		
			gender-		
			influenced		
			heredity		
Written	Written	Plant heredity	The student	5	7
exam	exam		learns what is		
			genetic transit,		
			multiple genetic		
			linkage,		

			chromosomal		
			mapping.		
Ranid exam	Lecture and	Plant heredity	Inheritance of	5	8
	discussion	i lunt norodity	multiple alleles	5	0
Oral exams	Lecture and	Plant heredity	Nonnuclear	5	9
	discussion	i lant horoarty	genetics and	5	
	diccuccion		the factors		
			affecting it		
Rapid exam	Lecture and	Plant heredity	recognize the	5	10
	discussion	i lant horoarty	cell cycle and	5	10
			the process of		
			division.		
Oral exams	Lecture and	Plant heredity	To familiarize	5	11
	discussion		the student	5	
			with the		
			synthesis of		
			DNA . protein		
			and genetic		
			code		
Rapid exam	Lecture and	Plant heredity	Identify the	5	12
·	discussion		devices used in		
			genetics		
			laboratories		
Oral exams	Lecture and	Plant heredity	Application of	5	13
	discussion		genetic		
			foundations in		
			plant breeding		
			and		
			improvement		
Rapid exam	Lecture and	Plant heredity	The student	5	14
	discussion		recognizes the		
			relationship of		
			genes to each		
			other		
Written	Written	Plant heredity	Teaching the	5	15

exam	exam			student	what	t	
				mutation	ns are,	,	
				what	their	-	
				effect a	nd what	t	
				are	their	-	
				benefits	i		
. Course Evalu	ation						
Theoretical te	sts: (daily exa	ams – monthly	exams -	oral exar	ms)		
Practical tests	s: (daily exam	s – monthly ex	ams – ora	al exams	)		
Theoretical ar	nd practical re	ports					
Sample scree	ning and pract	ical experimen	ts				
. Learning and	Teaching Res	ources					
Adnan Ha	issan Moha	ammed (19	Required	d textboo	ks		
Fundamentals	s of genetics.	Dar Al-Kutub					
Printing and F	Publishing. Cor	nnector					
Shawqi, Ahm	ned Shawqi, I	Fathi Muhamn	Main ref	erences	(sources	5)	
Abd al-Taw	ab and Ali	Zain al-Ab					
counting pe	ace. 1993	. Principles					
Genetics Tra	nslated Book.	Arab House					
Publishing an	d Distribution.	Cairo					
- All Agricultu	ural Journals a	nd Plant Gene	Recomm	nended	books	and re	eferences
Websites		(scientific journals, reports)					
Websites inte	Electronic References, Websites						

Course Title:					
Design and analysis of agricultural experiments					
Course Code					
00143	02				
Semester / Year					
Third / au	utumn				
The history of preparation of this description					
2024	4				
Available Attendance Forms					
Cam	e				
Number of Credit Hours (Total) / Number of U	nits (Total)				
2 hours theoretical and 3 hours	practical Number of units 3				
Course administrator's name (if more than one	name)				
Name: A.M. Dr.Ragheb Hadi Ajami Email: ra	ageb.hadi@mu.edu.iq				
Course Objectives					
* Introducing the student that there are areas	Course Objectives:				
that depend on conducting experiments and					
these experiments must be designed on					
scientific bases					
* When analyzing experiments, it is					
according to scientific methods and logical					
steps					
* When obtaining accurate results of the					
experiment leads us to make the appropriate					
decision					
* Introducing the student to many types of					
designs, as each experience has a specific					
design					
* Introduce the student to how to test the					
morale of each mathematical model					
* Introducing the student that there are tests					
conducted before the experiment and tests					

nronosed after	the experiment				
* Introducing 1	the student that the	nere are vali			
that can be lost	t during the experir	nent and can			
	t during the expensi				
Teaching and L	earning Strategies				
Audio methods	(teaching explanat	ion of the subiect)		Stra	iteav
Blackboard writ	ina style				
The method of	direct dialogue bet	ween the teacher an	d the student wi	th	
evaluation of th	e student in the cla	assroom participations	3		
Course Structur	re		-		
Evaluation	Learning	Unit or subject	Required	Hours	The
method	method	name	Learning		week
			Outcomes		
Rapid exam	Lecture	A brief history of	Theoretical	2	1
·		statistics, definition	lecture		
		of statistics,			
		division of			
		statistics			
Rapid exam	Lecture	Measures of	Theoretical	2	2
		central tendency,	lecture		
		measures of			
		concentration			
Rapid exam	Lecture	Dispersion meters	Theoretical	2	3
			lecture		
Rapid exam	Lecture	Hypothesis	Theoretical	2	4
		testing, statistical	lecture		
		errors, hypothesis			
		testing-t			
First month	Theoretical	examination	examination	2	5
exam	exam				
Rapid exam	Lecture	Chi-Square Test	Theoretical	2	6
			lecture		
Rapid exam	Lecture	general concepts	Theoretical	2	7
		and definitions in	lecture		
		the design and			

	1	1		[	1	r
		analysis of				
		experiments	<b>;</b> ,			
Rapid exam	Lecture	Types of		Theoretical	2	8
		agricultural		lecture		
		experiments	i,			
		complete rand	om			
		design				
Rapid exam	Lecture	LSD Test		Theoretical	2	9
				lecture		
Second month	Theoretical	examination		examination	2	10
exam	exam					
Rapid exam	Lecture	Design of		Theoretical	2	11
		complete rand	om	lecture		
		sectors				
Rapid exam	Lecture	Duncan Tes	st	Theoretical	2	12
				lecture		
Rapid exam	Lecture	Latin Square	e	Theoretical	2	13
		Design	Design			
Rapid exam	Lecture	Factor		Theoretical	2	14
		experiments		lecture		
Rapid exam	Lecture	Factor		Theoretical	2	15
		experiments w	vith	lecture		
		two factors				
. Course Evaluat	ion					•
Distributing the	score out of 100 a	according to the	tasks	assigned to th	e studer	nt such
as daily prepara	ation, daily, oral, m	onthly, written ex	kams	, reports etc	C	
. Learning and To	eaching Resources	6				
1- Design ar	nd analysis of exp	eriments - Kha	Req	uired textbook	s (meth	odology
AI-Rawi and Kł	nalaf Allah 2000		any	)		
			Mai	n references (s	ources)	
– Foreign bo	ooks specialized	in the design	Rec	commended	books	and
agricultural expo	eriments .		refe	rences (scier	ntific jo	urnals,
			repo	orts)		
Arabic articles	issued by academ	ic and professio	Elec	ctronic Reference	ces, Web	osites
bodies						
			1			

. Course Name					
Land reclamation					
. Course Code					
0014304					
. Semester / Year					
Autumn / Third Semester					
. The history of preparation of this description					
2024					
Available Attendance Forms					
Physical presence					
. Number of Credit Hours (Total) / Number of Units (Total)					
2 Theoretical 2 Practical Modules 3					
. Course administrator's name (if more than one name)					
Name: Prof. Dr. Ghanem Bahloul Noni Email: ghanem-bahlol@	)mu.edu.iq				
. Course Objectives					
To introduce the student to ecology Cou	irse Objectives				
The student should classify climate factors and the					
relationship to soil					
The student should detail the benefits and harms of climation					
factors such as temperature, wind and frost					
The student should know the pollution and its causes					
The student should evaluate desertification and glc					
warming					
. Teaching and Learning Strategies					
1- Explanation and clarification	Strategy				
2- Lecture method					
3- Student Groups					
4- Practical lessons					
5- Scientific trips					

Course Stru	ucture				
Evaluation	Learning	Unit or subject	Required	Hours	The week
method	method	name	Learning		
			Outcomes		
Exam	Explanation and presentation of the model and lecture	Land Reclamation	To introduce the student to the concept of saline soils	5	The first
Exam	Explanation and presentation of the model and lecture	Land Reclamation	To identify the sources of salts	5	Second
Exam	Explanation and presentation of the model and lecture	Land Reclamation	The student should know the means of transporting salts	5	Third
Exam	Explanation and presentation of the model and lecture	Land Reclamation	The student should know the stages of soil salinization	5	Fourth
Exam	Explanation and presentation of the model and lecture	Land Reclamation	The student should know the conditions of soil salinization	5	V
Exam	Explanation and presentation of the model and lecture	Land Reclamation	To familiarize the student with the departments of saline and soda soils	5	Sixth
Exam	Explanation	Land	The student	5	Seventh
	and	Reclamation	should recognize		
------	--------------	-------------	--------------------	---	------------------
	presentation		the		
	of the model		manifestations of		
	and lecture		the effect of		
			salinity on plant		
			growth		
	Explanation	Land	The student		
	and	Reclamation	should know the		
Exam	presentation		indicators for	5	Eighth
	of the model		determining the		
	and lecture		effect of salinity		
		Land	The student		
	Explanation	Reclamation	should learn		
_	and		about the means	_	<b>F</b> 11 - 11
Exam	presentation		of raising the	5	Ninth
	of the model		plant's ability to		
	and lecture		tolerate salinity		
Exam	Explanation	Land	The student		
	and	Reclamation	should identify		
	presentation		the factors		
	of the model		determining the		
	and lecture		quality of		
			irrigation water	5	Х
			and the		
			indicators used to		
			determine the		
			quality of		
			irrigation water		
Exam	Explanation	Land	The student		
	and	Reclamation	should be		
	presentation		introduced to	F	
	of the model		irrigation water	5	Eleventh
	and lecture		classification		
			systems		
Exam	Explanation	Land	The student	5	Twelfth
,					

	•					
	and	Reclamation	should	know how		
	presentation		to li	ve with		
	of the model		Sa	alinity		
	and lecture					
Exam	Explanation	Land				
	and	Reclamation	To ide	entify the		
	presentation		prob	lems of	5	Thirteenth
	of the model		limest	one soils		
	and lecture					
					5	Fourteenth
					5	Fifteenth
. Course Evaluation						
1- The	1- Theory tests 25					
2- Pra	ctical tests 15	5				
3- Rep	orts & Studies	10				
4- Final Ex	am 50					
. Learning ar	nd Teaching Res	sources				
Land Recla	mation Dr. Hadi	Hassan		Required textbooks (methodolo		
Lectures				if any)		
				Main refere	ences (s	ources)
					nded t	ooks and
Ir	Iraqi academic scientific journals			references (scientific journals,		
				reports)		
	Soil reclamation				Referen	ces, Website

Course Title:				
Leguminous	s crops			
Course Code				
001430	)5			
Semester / Year				
Autumn /	Third			
Date of preparation of this description:				
2023-20	)24			
Number of Credit Hours (Total) / Number of Un	its (Total)			
Number of credit hours (total) 75 hours				
Course Administrator Name:				
Name: Prof. Dr.Ali Rahim Karim Email: ali_raheem2002@mu.edu.iq				
Course Objectives				
- Enable the student to identify the types of	Course Objectives			
leguminous crops in general	This course description provides a b			
- Enable the student to know the economic	summary of the most import			
importance and dates of planting and	characteristics of the course			
agricultural operations of leguminous crops	The learning outcomes expected of			
- Enable the student to know the chemical	student to achieve are proof of whet			
properties and harvest dates of legumes	he has made the most of the availa			
- Enable the student to know the botanical	learning opportunities. It must be line			
description of leguminous crops and	to the program description.			
distinguish between them				
Teaching and Learning Strategies				
	Strategy			

1– Explanatio method–3–S groups–4Prac	n and clarifi tudent ctical lesson	cation-2Lecture s in laboratories			
Course Structur	e		<u> </u>		
Evaluation	Practical	Unit or subject	Required Learning Outcome s	Hours	The week
Discussions Exams	Nitrogen Fixation Genes Engineeri	Seed leguminous crops – the importance of legumes in		2 hours theoretica I 3 hours	First week
Discussions Exams	Bacterial vaccine	Nitrogen stabilization symbiotically – node formation – cross-pollination groups –.		2 hours theoretica I 3 hours practical	Second week
Discussions Exams	Bacterial inoculatio n and factors affecting it	Intervened farming. Types – importance		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Third week
Discussions Exams	Causes of flower fall in leguminou s crops and their treatment	Beans – origin – geographical distribution – economic importance – uses of beans.		2 hours theoretica I 3 hours practical	Fourth week

Discussions Exams	Botanical descriptio n of soybeans and field pistachios	Nutritional value of beans – chemical composition of seeds – varieties – genetic sources.	<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Fifth week
Discussions Exams		First month exam	<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Week Six
Discussions Exams	Botanical descriptio n of beans	Bean breeding programs – ripening – harvesting – yield ingredients.	<ul><li>2 hours</li><li>theoretica</li><li>1</li><li>3 hours</li><li>practical</li></ul>	Week seven
Discussions Exams	Botanical descriptio n of chickpeas	Chickpeas – Economic importance and use – Chemical composition of chickpea seeds.	2 hours theoretica I 3 hours practical	Week eight
Discussions Exams	Vegetative density of leguminou s crops	Varieties – harvesting – nitrogen fixation for chickpeas.	<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Week Nine
Discussions Exams	Botanical descriptio n of lentils	Lentils – economic importance – nutritional value – maturity – harvest.	<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Week Ten
Discussions Exams	Botanical descriptio n of mash	Mash – economic importance – nutritional value –	2 hours theoretica	Week Eleven

						]
		maturity – h	arvest.		3 hours	
					practical	
Discussions	Botanical	Physiolog	ду —		2 hours	Twelfth
Exams	descriptio	econon	nic		theoretica	week
	n of	importan	ce –		I	
	beans	nutritional v	value –		3 hours	
		maturity – h	arvest.		practical	
Discussions	Botanical	Cowpea	a –		2 hours	Thirteent
Exams	descriptio	econon	nic		theoretica	h week
	n of	importan	ce –		I	
	cowpea	nutritional v	value –		3 hours	
		maturity – h	arvest.		practical	
Discussions					2 hours	Fourteen
Exams					theoretica	th week
					I	
					3 hours	
					practical	
		Second mo	nth			Week
		exam				V
						ten
. Course Evaluati	on	I		I		I
Distributing the	score out of	100 according	g to the ta	asks assign	ed to the stu	ident such
as daily prepara	tion, daily, or	al, monthly, w	vritten exa	ams, reports	s etc	
Learning and Te	eaching Reso	urces				
Book	of pulses cro	ps	Required textbooks (methodology, if any)			gy, if any)
From methodo	logical book	s, auxiliary	Main re	ferences (so	ources)	
books, the l	nternet and	scientific				
research						
Scientific journals in the main specializations			Recomr (scientif	mended bo ic journals, t	oks and reports)	references

AI-Muthanna University	e-learning	Electronic References, Websites
website		
https://agr.mu.edu.iq/		

Course Title:					
Cereal cr	ops				
Course Code					
002430	3				
Semester / Year					
Spring/ T	hird				
Date of preparation of this description:					
2023-20	24				
Number of Credit Hours (Total) / Number of United	ts (Total)				
Number of credit hours (total) 75 hours					
Course Administrator Name:					
Name: A.M. Dr.Ragheb Hadi Ajami Email: rag	jeb.hadi@mu.edu.iq				
Course Objectives					
- Enable the student to identify grain crops	Course Objectives				
and their economic importance.	This course description	n provides	sab		
<ul> <li>Enable the student to know the</li> </ul>	summary of the	most in	nport		
environmental factors and appropriate soil	characteristics of the c	ourse			
factors to manage the field planted with	The learning outcomes	s expected	d of		
grain crops perfectly	student to achieve are proof of whet				
<ul> <li>Enable the student to identify and pay</li> </ul>	he has made the mos	t of the a	availa		
attention to soil and crop service operations	learning opportunities.	It must b	e linl		
<ul> <li>Enable the student good field</li> </ul>	to the program descrip	tion.			
management methods to increase the yield					
in quantity and quality					
Teaching and Learning Strategies			1		
Teaching and learning methods		Strategy			

method-3-Student					
groups-4Pra	re	s in laboratories			
Evaluation	Practical	Unit or subject	Required	Hours	The
method		name	Learning		week
			Outcome		
			S		
Discussions	Tillage	First week The		2 hours	First
Exams	Soil	Economic		theoretica	week
	Service	Importance of			
	Operation	Cereal Crops in		3 hours	
	s	Iraq and the World		practical	
Discussions	Soil			2 hours	Second
Exams	Service	Second week		theoretica	week
	Processes	Centers of the		I	
	Smoothing	emergence of		3 hours	
	and	cereal crops in the		practical	
	leveling	world			
Discussions	Cultivation	The third week		2 hours	Third
Exams	methods	Cereal crop		theoretica	week
	types and	productivity in Iraq		1	
	importanc	and the reasons for		3 hours	
	е	its decline		practical	
Discussions	Irrigation	Fourth week wheat		2 hours	Fourth
	i i	1	1	1 0	Luna ala

			(		
	modern	importance in Iraq		I	
	irrigation	and the world		3 hours	
	methods			practical	
Discussions	Salinity			2 hours	Fifth
Exams	and its	Fifth week wheat		theoretica	week
	direct and	crop, soil and crop		I	
	indirect	service operations		3 hours	
	effects			practical	
Discussions	Organic			2 hours	Week
Exams	agriculture	Sixth week barley		theoretica	Six
	, its	crop, economic		I	
	importanc	importance in Iraq		3 hours	
	e and	and the world		practical	
	benefits				
Discussions	Biofertilize			2 hours	Week
Exams	rs and	Maize crop,		theoretica	seven
	their types	economic		I	
		Importance in Iraq		3 hours	
		and the world		practical	
Discussions	Drought			2 hours	Week
Exams	and its	Maize crop, soil		theoretica	eight
	impact on	and yield service		I	
	field crops	processes		3 hours	
				practical	
Discussions	Jungle	Diag and		2 hours	Week
Exams	and ways	Rice crop,		theoretica	Nine
	to combat	economic		I	
	it	importance in Iraq		3 hours	
		and the world		practical	
Discussions				2 hours	Week
Exams		Rice yield, soil and		theoretica	Ten
		yield service		I	
		operations		3 hours	
				practical	

Discussions Exams Discussions Exams	Types of feed and methods	White corn a millet, econc importance i and the worl Maize crop, economic	and omic n Iraq d		<ul> <li>2 hours</li> <li>theoretica</li> <li>I</li> <li>3 hours</li> <li>practical</li> <li>2 hours</li> <li>theoretica</li> <li>I</li> </ul>	Week Eleven Twelfth week
	of preservati on	and the worl	n Iraq d		3 nours practical	
Discussions Exams		Sorghum an millet, soil ai service oper	d nd crop ations		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Thirteent h week
Discussions Exams	Preparing programs for field crops	Oatmeal and crop – econ- importance i and the worl	d rye omic n Iraq d		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Fourteen th week
		Second mo exam	nth			Week V ten
. Course Evaluati	on	<u> </u>				
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports etc						
. Learning and Te	eaching Reso	ources				
Principles of field crops Abdul Majeed Required textbooks (methodology, if any) Al-Ansari				gy, if any)		
From methodo books, the I	From methodological books, auxiliary       Main references (sources)         books, the Internet and scientific					

research	
Scientific journals in the main specializations	Recommended books and references (scientific journals, reports)
Al-Muthanna University e-learning website https://agr.mu.edu.iq/	Electronic References, Websites

Course Title:	
Seed techno	blogy
Course Code	
0024305	5
Semester / Year	
Spring/ Th	ird
Date of preparation of this description:	
2023-202	24
Number of Credit Hours (Total) / Number of Unit	s (Total)
Number of credit hours (total) 75 hours	
Course Administrator Name:	
Name: M.D.Ali Halil Naima Email: a	li.algayashe@mu.edu.iq
Course Objectives	
Introducing the student to the importance	Course Objectives
seeds and means of improving physical	This course description provides a b
genetic characteristics related to the producti	summary of the most import
processing, approval, inspection, packaging	characteristics of the course
storage of seeds, and to identify the internatic	The learning outcomes expected of
instructions for the examination and circulatior	student to achieve are proof of whet
seeds.	he has made the most of the availa
	learning opportunities. It must be lin
	to the program description.

Teaching and	learning meth	ods			Strategy
1- Explanati	on and clarific	cation			
2-Lecture m	ethod				
3-Student gi	roups				
4-Practical I	essons in lab	oratories			
Course Structu	Prostical		Doguirod	Hours	The
method	Fractical	name	Learning	nouis	week
method		hame	Outcome		Week
			S		
Discussions	Identify the			2 hours	First
Exams	devices	Introduction to		theoretica	week
	and	Seed Technology		I	
	equipment	<ul> <li>A Brief History of</li> </ul>		3 hours	
	for	Seed Inspection in		practical	
	sampling	Iraq and the World			
	and seed	and ISTA Activity			
	tests				
Discussions	Seed			2 hours	Secon
Exams	diagnosis	Physical and		theoretica	week
	by physical				
	and			3 hours	6
	chemical			practical	
	methods				
					1
Discussions	Seed	Flowering –		2 hours	Third

	materials	fertilization		I	
	and			3 hours	
	methods of			practical	
	germination				
Discussions	Conducting			2 hours	Fourth
Exams	an			theoretica	week
	experiment			I	
	to			3 hours	
	understand	Seed physiology		practical	
	the	beed physiclegy			
	nhysiology				
	of				
	armination				
Disquesions	germination			2 hours	Ciffb
Exams	Calendar			2 nours	riim week
	of	Seed activation			WCCK
	germinating			3 hours	
	seedlings			practical	
Discussions		First month exam		2 hours	Week
Exams				theoretica	Six
				I	
				3 hours	
				practical	
Discussions	Testing the			2 hours	Week
Exams	moisture			theoretica	seven
	content	Seeds		a houre	
	and health			practical	
	status of			Presented	
	seeds				
Discussions	Visit to the	Droduction of		2 hours	Week
Exams	General			theoretica	eight
	Authority	cerunea seeas		1	
	1	1	1		L

		1	1	1	[
	for Seed			3 hours	
	Inspection			practical	
	and				
	Certificatio				
	n				
Discussions	Seed			2 hours	Week
Exams	certification			theoretica	Nine
	system in			I	
	Iraq and			3 hours	
	how to	Field Inspection -		practical	
	issue	Isolation Distances			
	certificates				
	of rejection				
	or				
	acceptance				
Discussions	Numerical			2 hours	Week
Exams	inspection			theoretica	Ten
	of seeds,	Seed drying and		I	
	purity and	preparation		3 hours	
	hygiene			practical	
	test				
Discussions	Equations			2 hours	Week
Exams	for	Basic rules in the		theoretica	Eleven
	calculating	production of seeds		I	
	germination	of the most		3 hours	
	characterist	important		practical	
	ics	agricultural crops			
Discussions	Accelerate			2 hours	Twelfth
Exams				theoretica	week
		Seed storage		I	
	Screening			3 hours	

					practical	
Discussions					2 hours	Thirteent
Exams	Electrical	Seed marketing			theoretica	h week
	connection				1	
	check				3 hours	
					practical	
Discussions	Preparation	Sood Tooba	ology		2 hours	Fourtee
Exams	of a report		ology		theoretica	nth
	on seed	Research ar	nd		I	week
	technology	Recommend	lations		3 hours	
		in Iraq			practical	
	research					
		Second mo	nth			Week
		exam				V
						ten
as daily prepar	معامم محالم					
	alion, daliy, ora	al, monthly, w	ritten exa	ams, reports	etc	
Learning and T	eaching Resou	al, monthly, w	ritten exa	ams, reports	• etc	
Learning and T Honorary, Ab	eaching Resoudullah Qasim	al, monthly, w urces 1 and Mr.	ritten exa	ams, reports	etc	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh	eaching Resou dullah Qasim Khalaf. 1983.	urces and Mr. Crop seeds	ritten exa	ams, reports	etc (methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and	eaching Resou dullah Qasim Khalaf. 1983. quality. Minisi	urces and Mr. Crop seeds try of Higher	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar	eaching Resou dullah Qasim Khalaf. 1983. quality. Minisi	urces and Mr. Crop seeds try of Higher Research.	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir	urces and Mr. Crop seeds try of Higher Research. nting Press	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub	urces and Mr. Crop seeds try of Higher Research. nting Press for Printing	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of and Publishing	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing v of Mosul.	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of and Publishing First edition. p.	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University 409.	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing v of Mosul.	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of and Publishing First edition. p. Amin, Hasher	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University 409. m Mohamme	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing of Mosul. d and Ali	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of and Publishing First edition. p. Amin, Hasher Hussein Abbas	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University 409. m Mohamme s. 1988. Seed	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing of Mosul. d and Ali d Inspection	ritten exa	ams, reports	(methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education ar University of Directorate of and Publishing First edition. p. Amin, Hasher Hussein Abbas and Certificat	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University 409. m Mohamme s. 1988. Seed ion. Ministry	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing of Mosul. d and Ali d Inspection of Higher	ritten exa	ams, reports	(methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education an University of Directorate of and Publishing First edition. p. Amin, Hasher Hussein Abbas and Certificat Education an	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist nd Scientific Mosul. Prir Dar Al-Kutub g – University 409. m Mohamme s. 1988. Seed ion. Ministry nd Scientific	urces and Mr. Crop seeds try of Higher Research. ting Press for Printing of Mosul. d and Ali d Inspection of Higher Research.	ritten exa	ams, reports	methodolo	gy, if any)
Learning and T Honorary, Ab Ahmed Saleh production and Education an University of Directorate of and Publishing First edition. p. Amin, Hasher Hussein Abbas and Certificat Education an University of Ba	eaching Resou dullah Qasim Khalaf. 1983. quality. Minist d Scientific Mosul. Prir Dar Al-Kutub g – University 409. m Mohamme s. 1988. Seed ion. Ministry d Scientific aghdad. Direct	al, monthly, w urces a and Mr. Crop seeds try of Higher Research. ating Press for Printing of Mosul. d and Ali d Inspection of Higher Research. corate of Dar	ritten exa	ams, reports	(methodolo	gy, if any)

University of Mosul. WP: 270.	
Muhammad, Abdul Azim Kazem and	
Muayyad Ahmed Younis. 1991.	
Fundamentals of plant physiology. Part	
III. Ministry of Higher Education and	
Scientific Research. University of	
Baghdad. Faculty of Agriculture. Dar Al-	
Hekma for Printing and Publishing. WP:	
1328.	
Attia, Hatem Jabbar and Khudair Abbas	
Jadua. 1999. Plant growth organizations	
- theory and practice. Ministry of Higher	
Education and Scientific Research.	
University of Baghdad. College of	
Agriculture. Directorate of Dar Al-Kutub	
for Printing and Publishing – Baghdad –	
Iraq. WP: 327.	
From methodological books, auxiliary	Main references (sources)
books, the Internet and scientific	
research	
Scientific journals in the main	Recommended books and references
specializations	(scientific journals, reports)
Al–Muthanna University e–learning	Electronic References, Websites
website	
https://agr.mu.edu.iq/	

1.	Cours	e Name							
			Honey	beekeeping					
2. Co	ourse C	Code							
			0C	24301					
3. Se	emeste	r / Year							
			Sprii	ng/ Third					
4. Th	. The history of preparation of this description								
	2023-2024								
5. Av	/ailable	Attendance	Forms						
In	classro	ooms and agi	ricultural fields						
6. Ni	umber	of Credit Hou	rs (Total) / Numbe	er of Units (To	tal)				
2+	+2								
7. Co	ourse a	dministrator's	name (if more that	an one name)					
Na	ame: D	r. Lafta Awao	d Atshan Email: laf	ta.awad@mu	.edu.iq				
8. Co	ourse C	Objectives							
Pr	ovide	a new j	ob opportunity	Course	Objectives				
gr	aduate	S							
	•••								
	•••								
9. Te	eaching	and Learnin	g Strategies			T			
						Strate	egy		
1- Ex	planati	on and clari	fication						
2-Lec	ture m	ethod							
3-Stu	dent g	roups							
4-Pra	ctical I	essons in la	boratories						
		<b>2</b>							
10. 0	Course	Structure							
Evalua	ation	Learning	Unit or subject na	ime	Required	Hours	The .		
metho	d	method			Learning		week		
	Outcom								

	Print	lectu	Honey beekeeping	g through		4	1
	and	vio	history		theoretical	4	2
	visuals		The economic ir	nportance	and	4	3
			honey beekeeping		practical	4	4
			Honey bee status	in the anii		4	5
			kingdom Classification	on		4	6
			Honey Bee Products	6		4	7
			Methods of propaga	ation of ho		4	8
			beehives			4	9
			Types of honey bee	keeping hiv		4	11
			Physiological struc	ture of		4	12
			honey bee body			4	13
			Directing organs in I	noney bees		4	14
			The most important	glands in		4	15
			body of the honey b	ee worker			
			Honey bee sect				
			Honey bee life cycle	•			
			Honey bee behavior				
			Bee diseases				
			Brood diseases				
			Diseases of adult be	es			
11. Course Ev	aluation						
Distributing	g the so	ore c	out of 100 according	to the task	s assigned	to the s	tudent
such as da	aily prep	aratio	on, daily, oral, monthly	y, written ex	ams, report	s etc	>
12. Learning a	Ind Tea	ching	Resources				
				Required t	extbooks (m	ethodolo	ogy, if a
Miracle honey	y bees			Main refer	ences (sour	ces)	
				Recomme	nded b	ooks	and
				references	s (scientif	ic jo	urnals,
				reports)			
https://www.y	outube	.com/	watch?v=9ePic3dtykl	Electronic	References,	Website	es
https://www.y	outube	.com/	watch?v=HdBkgBSjF				

https://www.youtube.com/watch?v=Rj6R6oNSL	

1. Course Name	
Mechanization of field crops	
2. Course Code	
0024302	
3. Semester / Year	
Spring/ Third	
4. The history of preparation of this description	
2023-2024	
5. Available Attendance Forms	
Came	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 Hours / 3	
7. Course administrator's name (if more than one name)	
Name: Assoc. Prof. Falih Hamed Kassar Email : flaiehkassar@	)mu.edu.iq
8. Course Objectives	
We show students the importance Course Objectives	
understanding the basics of agricult	
machinery, such as identifying the ty	
and parts of the most import	
equipment used in the preparation a	
preparation of primary and second	
soils and the most important machines	
serving the field crop. Identify	
different areas of use of agricult	
machinery and equipment and desci	
some of the different types.	
9. Teaching and Learning Strategies	Ctrata
	Strategy

10. Course Structu	re				
Evaluation method	Learning	Unit or	Required	Hours	The week
	method	subject	Learning		
		name	Outcomes		
Written exam	Came	Identify all the machines that are used to prepare the soil – the machine is connected to the tug	Introduction, the importance of tillage, the mechanical composition of the soil, the technological properties of the soil and its impact on the tillage process	2theoretic 2 Practical	First
	Came	Types of axial tippers – know the parts, mesh and adjustment – practical training in the field	Dump plows, types, how they work, use, parts, how to turn the soil section	2theoretic 2 Practica	Second
Written exam Written exam	Came	Calculation of forces acting on plows – choosing the right tug for the plow Identify the tipper tip,	Calculation of the force acting on plows, choosing the right tug for plows Disc plow Tipper, types,	2theoretic 2 Practica 2theoretic 2 Practica	Third
		coin and connect	work, use, parts and how		

[	I				
		parts – the	to turn the soil		
		process of	section		
		netting,			
		change and			
		training			
Written exam	Came	Vertical disc	Vertical disc	2theoretic	V
		plow and	plow, types,	2 Practica	
		identification	work, use,		
		of parts and	parts, how to		
		types and	turn the soil		
		how to work	section		
		in the field			
Written exam	Came	Rotary plow		2theoretic	Sixth
		-	The rotary	2 Practica	
		identification	plow and how		
		of parts,	to transfer the		
		linking	movement -		
		process,	types and		
		field tillage	types of		
		training,	weapons and		
		maintenance	a comparison		
		and	between it and		
		maintenance	the dump plow		
		parts			
Written exam	Came		Plow Digger	2theoretic	Seventh
		Identify the	Types, work,	2 Practica	
		parts of the	parts, use,		
		excavator	advantages		
		plow, the	and		
		process of	disadvantages,		
		tying and	tillage		
		tillage	methods,		
		training	calibration and		
			binding		
	1			1	

Came	Identify the	Plow under	2theoretic	Eighth
	plow under	the soil and its	2 Practica	
	the soil, the	importance,		
	process of	areas of use,		
	linkage, field	calculation of		
	training on	the forces		
	tillage,	acting on it,		
	maintenance	the time		
	and	capacity		
	maintenance	required to		
	parts	pull		
Came	Serrated	Disc combs,	2theoretic	Ninth
	combs –	types,	2 Practica	
	identification	composition,		
	of their	features,		
	types, parts	areas of use,		
	and network	factors		
	and	affecting the		
	maintenance	depth of		
	Field work	calibration		
Came		Serrated	2theoretic	Х
	Disc combs	combs their	2 Practica	
	– mesn	importance,		
	process with	components		
	puller –	and use,		
	parts of	advantages,		
	smoothing	disadvantages,		
	operations –	fastening and		
	maintenance	calibration		
Came	Guards -	Insulation,	2theoretic	Eleventh
	types and	types,	2 Practica	
	use -	installation, in		
	maintenance	the machines		
	and	of use,		
	maintenance	advantages		
	Came	CameIdentify the plow under the soil, the process of linkage, field training on tillage, maintenance and maintenance partsCameSerrated combs – identification of their types, parts and network and maintenance Field workCameDisc combs – mesh process with puller – parts of smoothing operations – maintenanceCameGuards – types, and use – maintenanceCameDisc combs – mesh process with puller – parts of smoothing operations – maintenanceCameGuards – types and use – maintenance and	CameIdentify the plow underPlow under the soil and its importance, areas of use, Iinkage, fieldimportance, areas of use, Iinkage, fieldIinkage, fieldcalculation of training on training on the forces acting on it, maintenancecalculation of the forces acting on it, maintenanceCameSerratedDisc combs, types, partsDisc combs, types, areas of use, and networkCameSerratedcatures, areas of use, and networkfactors areas of use, and networkCameDisc combs combs –serratedcomposition, of their features, areas of use, and networkCameDisc combs required to parts of smoothing operations – parts of smoothing operations – maintenanceSerrated components and use, advantages, fastening and calibrationCameGuards – types, and use –Insulation, in maintenanceCameGuards – installation, in maintenanceInsulation, in maintenance	CameIdentify the plow underPlow under the soil and its importance, process of areas of use, linkage, field training on tillage, acting on it, maintenanceImportance, areas of use, acting on it, maintenanceProcess areas of use, acting on it, maintenanceImportance, areas of use, acting on it, maintenanceProcess areas of use, acting on it, required toProcess acting on it, and capacity maintenanceProcess acting on it, acting on it, required toProcess acting on it, acting on it, acting on it, acting on it, acting on it, maintenanceProcess acting on it, acting on it, acting on it, acting on it, required toProcess acting on it, acting on it, acting on it, acting on it, acting on it, partsProcess acting the areas of use, areas of use, and network factors and network affecting the maintenanceProcess acting the affecting the and use, and use, and use, and use, advantages, fastening and calibrationProcestore activationCameGuards - types, and use - maintenanceInsulation, in maintenance2 theoretic activationCameGuards - types, and use, advantages, fastening and calibration2 theoretic activationCameGuards - types, and use, and use, advantages, fastening and calibration2 theoretic activationCameGuards - types, and use, advantages, fastening and calibration2 theoretic activationCameGuards - types,Insulation, in maintenance2 theoretic act

			and		
			disadvantages		
Written exam	Came		Leveling	2theoretic	Twelfth
			machines, the	2 Practica	
		Lovaling	importance of		
		Leveling	leveling, types		
		machines –	of leveling		
		importance	machines,		
		- use in the	use,		
		field	advantages		
			and		
			disadvantages		
Written exam	Came		Planning	2theoretic	Thirteenth
		Planning	machines,	2 Practica	
		Machines -	their		
		Types -	importance.		
		Importance	parts, types.		
		– Grid –	use		
		Calibration -	advantages		
		Field Work	and		
			disadvantages		
Writton oxom	Como	Composito	uisauvantages	Othoorotia	Fourtoopth
	Came	composite			Fourteentin
		machines -	Composite		
		types –	machinery,		
		importance	importance,		
		<ul> <li>mesh with</li> </ul>	parts, types,		
		puller –	uses and		
		calibration -	benefits		
		work in the			
		field			
Written exam	Came	Work in the	Maintenance	2theoretic	Fifteenth
		workshop	and repair of	2 Practica	
		for repair	agricultural		
		and	machinery, its		
		maintenance	sustainability,		

	and the			
	importance of			
	storing			
	agricultural			
	machinery			
The most important methods and means	used in the transmission and conversion of			
movement and energy in agricultural machinery and machinery				
Watching clips of the engines and how the	ney work with the presentation of ( 3D )			
videos to familiarize the student with the engine in detail				
Practical viewing of the fuel system in the	e engine (gasoline – diesel)			
Machines or else	Required textbooks (methodology, if any)			
Field crop mechanization equipment /	Main references (sources)			
authoring a. M. Lotfi Hussein and Dr.				
Abdel Salam Mahmoud.				
Kepner, R.A., R.Bainer and E.L.Barger.				
Principles of farm				
machinery. 3rd edition. AVI pub	8			
company. USA. P31				
	Recommended books and references			
	(scientific journals, reports)			
Multiple Locations	Electronic References, Websites			

Course Name					
Field crop diseases					
Course Code					
	0024304				
Semester / Year					
Semester	/ Second Semester				
The history of preparation of this descrip	tion				
14/02/2024					
Available Attendance Forms					
	Came				
Number of Credit Hours (Total) / Number	er of Units (Total)				
75 hours (30 theoretical + 45 practical)	/ 3 units				
Course administrator's name (if more that	an one name)				
Name: Dr. Ali Faraj Jubeir Email: alifj80@mu.edu.iq					
Course Objectives					
Introducing the student to diseases	Course Objectives				
that affect field crops of various kinds					
(fungal, bacterial, viral, nematode,					
physiology).					
Determine the economic importance of					
these diseases					
Identify different environmental factors					
and their impact on the spread of					
infectious plant diseases					
Pathological symptoms caused by					
these diseases					
Finding the best ways to combat					
diseases through methods (natural,					
applied, mechanical, agricultural,					
biological, legislative, chemical,					
genetic, integrated control programs)					
Teaching and Learning Strategies					

A- Cognitive	objectives			Stra	ategy
* The student should know the diseases that affect field crops and					
names.					
* To try to fir	nd out how pat	hogens are transmitted	from one field to a	not	
or the spread	of the cause t	hrough the same field.			
* The studer	nt should maste	er how to prevent and o	control the occurre	nce	
diseases.					
* To be able	e to find soluti	ions in the case of rap	oidly spreading ep	ide	
diseases and	ways to contro	ol them.			
* Identify mo	dern methods o	of diagnosing diseases a	and also control.		
* The studer	nt should acqui	ire how to disseminate	the information ob	otaiı	
in the control	of diseases.				
B – Skills obj	ectives of the o	course.			
* The studen	t should maste	r how to diagnose these	e diseases.		
* The studen	t should be ab	le to treat diseases that	affect field crops		
* To master t	the use of dise	ase control machines.			
* To master	the use of mod	ern and advanced meth	ods of control.		
Course Struc	ture				
Evaluation	Learning		Required		The
method	method	Unit or subject name	Learning	Hours	wook
method	methou		Outcomes		WEEK
Oral exams	Lecture and	Introduction to Field	Memorization,	5	1
	discussion	Crop Diseases	understanding,		
			practical		
			application		
				-	

Evaluation method	Learning method	Unit or subject name	Learning Outcomes	Hours	The week
Oral exams	Lecture and	Introduction to Field	Memorization,	5	1
	discussion	Crop Diseases	understanding,		
			practical		
			application		
Rapid exam	Lecture and	Wheat diseases	Memorization,	5	2
	discussion		understanding,		
			practical		
			application		
Oral exams	Lecture and	Barley diseases	Memorization,	5	3
	discussion		understanding,		
			practical		
			application		
Rapid exam	Lecture and	Rice diseases	Memorization,	5	4
	discussion		understanding,		

	-			-	
			practical		
			application		
Oral exams	Lecture and	Yellow corn diseases	Memorization,	5	5
	discussion		understanding,		
			practical		
			application		
Rapid exam	Lecture and	Sorghum diseases	Memorization,	5	6
	discussion		understanding,		
			practical		
			application		
Written	Written	Written exam	Memorization,	5	7
exam	exam		understanding,		
			practical		
			application		
Rapid exam	Lecture and	Bean diseases	Memorization,	5	8
	discussion		understanding,		
			practical		
			application		
Oral exams	Lecture and	Diseases of oil crops	Memorization,	5	9
	discussion	(Sunflower,	understanding,		
		Safflower)	practical		
			application		
Rapid exam	Lecture and	Diseases of oil crops	Memorization,	5	10
	discussion	(soybeans, field	understanding,		
		pistachios, sesame)	practical		
			application		
Oral exams	Lecture and	Diseases of sugary	Memorization,	5	11
	discussion	crops	understanding,		
			practical		
			application		
Rapid exam	Lecture and	Diseases of cotton	Memorization,	5	12
	discussion	and flax	understanding,		
			practical		
			application		
Oral exams	Lecture and	Diseases of fodder	Memorization,	5	13

	1	1		I		
	discussion	crops		understanding,		
				practical		
				application		
Rapid exam	Lecture and	Tobacco dise	ases	Memorization,	5	14
	discussion			understanding,		
				practical		
				application		
Written	Written	Written exam		Memorization,	5	15
exam	exam			understanding,		
				practical		
				application		
. Course Evalu	ation					
Theoretical tests : (daily exams - monthly exams - oral exams)						
Practical tests : (daily exams - monthly exams - oral exams)						
Theoretical a	nd practical re	ports				
Sample scree	ening and pract	tical experimen	ts			
. Learning and	Teaching Res	ources				
1. Basics of	fungi and the	eir diseases /	Require	d textbooks		
Majeed AI-SI	nukri					
2. Field crop	diseases / Dr.	Maysar Zarzis				
– Iraqi Journa	al of Agriculture	9	Main references (sources)			
– Magazines	concerned wi	th diseases of				
field crops						
- Bulletins issued by agricultural compar						
and pesticide	companies					
- All agricultural journals and crop dise			Recommended books and references			
magazines			(scientific journals, reports)			
World Wide V	Veb		Electronic References, Websites			

Courses Land E	ormina					
Course: Land Fa	arming					
Course Code						
		00144	407			
Semester / Year	r					
		AUTUMN	/ T	hird		
Date of preparat	tion of this de	escription : 2023-	-202	24		
Number of Cred	it Hours (Tot	al) / Number of L	Inits	; (Total)		
Number of credit hours (total) 75 hours						
Course Administrator Name:						
Name: Assoc	. Prof. Haide	r Abdul Hussain I	Noh	isen	Email :	
Course Objectiv	es					
1. Develop tea	ching curricu	la in	С	ourse Objectiv	/es	
coordination wi	th higher dep	partments	This course description provide summary of the most			
- Develop tead	ching curricul	a by the				
department sim	nilar to the w	ork environment	cł	naracteristics of	of the cou	irse
- Providing the	e student with	n the skill in	Т	he learning o	utcomes	expected of
land reclamation	on and deser	t land	st	udent to achi	eve are	proof of whe
cultivation			he	e has made	the most	of the availa
- Creating a pl	hoto album s	howing the	le	arning opport	unities. It	t must be lin
plants used (ev	vidence for c	ultivation) and	to	the program	descriptic	on.
the environmer	ntal factors th	at suit them				
5. Study the pr	roblems relat	ed to pests and				
diseases of ea	ch field crop					
Teaching and Le	earning Strat	egies				
Teaching and I	earning meth	nods				Strategy
1– Explanatio	n and clarifi	cation				
2-Lecture me	thod					
3-Student gro	oups					
4-Practical lessons in laboratories						
9. Course St	ructure					
Evaluation	Learning	Unit or subject		Required	Hours	The

method	method	name	Learning Outcomes		week
Discussions		Crop production	Land	2 hours	First
Exams		factors	farming	theoretic	week
		Survey and		al	
		diagnosis of		3 hours	
		aguatic		practical	
		environment		•	
		plants in rivers			
		' and waterways			
Discussions		Carbon	Land	2 hours	Second
Exams		metabolism in	farming	theoretic	week
		crop production		al	
		Comparison of		3 hours	
		germination,		practical	
		growth and			
		development of			
		plant stages in			
		local soil planted			
		with wheat and			
		comparison with			
		non-saline			
Discussions		Productivity	Land	2 hours	Third
Exams		Factors	farming	theoretic	week
		Comparing the		al	
		effect of		3 hours	
		calcareous and		practical	
		gypsum soils with			
		ordinary soils			
		planted with			
		another crop,			
Discussions		Nitrogen	Land	2 hours	Fourth

		-		
Exams	stabilization and	farming	theoretic	week
	increased		al	
	productivity		3 hours	
	Comparison of the		practical	
	amount of			
	irrigation by			
	conducting an			
	experiment			
	Irrigation is			
	sufficient and			
	another is not			
	sufficient for the			
	same crop			
Discussions	The relationship of	Land	2 hours	Fifth
Exams	energy spent to	farming	theoretic	week
	crop productivity		al	
	Comparison of		3 hours	
	growth parameters		practical	
	in ordinary and			
	fertile soils			
Discussions	First month exam	Land	2 hours	Week
Exams		farming	theoretic	Six
			al	
			3 hours	
			practical	
Discussions	Post-harvest	Land	2 hours	Week
Exams	losses	farming	theoretic	seven
	Comparison of		al	
	growth standards		3 hours	
	for several crops		practical	
	grown in good soil			
	to determine the			
	reasons for the			
			1	

difference	in			
productivit	ty			
Discussions		Land	2 hours	Week
Exams Branching	in crop	farming	theoretic	eight
plants and	d their		al	
relationshi	ip to		3 hours	
productivit	ty		practical	
			-	
Discussions Disadvant	ages of	Land	2 hours	Week
Exams sandy and	d clay	farming	theoretic	Nine
lands			al	
			3 hours	
			practical	
Discussions Land defe	ect	Land	2 hours	Week
Exams remediation	on -	farming	theoretic	Ten
			al	
			3 hours	
			practical	
Discussions Farming la	and with	Land	2 hours	Week
Exams topograph	ic	farming	theoretic	Eleven
defects			al	
			3 hours	
			practical	
Discussions Disadvant	ages of	Land	2 hours	Twelfth
Exams limestone	and	farming	theoretic	week
gypsum la	ands		al	
			3 hours	
			practical	
Discussions Agriculture	e Guides	Land	2 hours	Thirteent
Exams		farming	theoretic	h week
			al	
			3 hours	
			practical	
Discussions Soil biolo	gy	Land	2 hours	Fourteen

	1	r		· · · · · · · · · · · · · · · · · · ·				
Exams				farming	theoretic	th week		
					al			
					3 hours			
					practical			
		0	- 11	1	practical			
		Second mo	nth exan	Land farming		vveek		
						V		
						ten		
. Course Evaluation								
Distributing the score out of $100$ according to the tasks assigned to the student such								
as daily preparation, daily, oral, monthly, written exams, reports etc								
			-					
			Require	ed textbooks (i	methodolog	y, if any)		
From meth	Main references (sources)							
auxiliary book								
scientific research								
Scientific journals in the main			Recommended books and references					
snecializations	(scientific journals reports )							
specializations			(500010	no journais, re	pono)			
Al-Muthanna University e-learning			Electronic References, Websites					
website								
https://agr.mu.e	edu.iq/							

Course Title:									
Biology OF WEEDS									
Course Code									
0014403									
Semester / Year									
Fourth									
Date of preparation of this description:									
2023-2024									
Number of Credit Hours (Total) / Number of Units (Total)									
Number of credit hours (total) 75 hours									
Course Administrator Name:									
Name: A. d.Faisal Mahbas Meaning of Taher Em									
Faisal.taher@mu.edu.iq									
Course Objectives									
Enable the student to und	erstand, absorb	Course Object	ctives						
and identify the nature of	bush life, the	This course description provides a b							
benefits and harms of bus	hes, methods of	summary o	f the mo	ost impor					
combating them, including	agricultural,	characteristics of the course							
mechanical, biological and	l chemical	The learning outcomes expected of							
methods, in addition to an	extensive study	student to achieve are proof of whet							
on pesticide groups	he has made	e the most c	of the availa						
and methods of adding th	learning opportunities. It must be lin								
bushes		to the program description.							
Teaching and Learning Stra	ategies								
Teaching and learning me	S	strategy							
1 – Explanation and clar									
2-Lecture method									
3-Student groups									
4-Practical lessons in laboratories									
9. Course Structure									
Evaluation Learning	Unit or subject	Required	Hours	The					
method Discussions	method	name Introduction and	Learning Outcome s	2 hours	week First				
-------------------------------------	--------	---------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------	----------------------------------------------------------------------------------------------------------	-------------------------				
Exams		some definitions and the importance of the bushes and its harms and benefits		theoretica I 3 hours practical	week				
Discussions Exams		Acclimatization of bush plants		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Second week				
Discussions Exams		The influence of the environment on the phenotypic and anatomical structure of the bush Drought resistance of the bush		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Third week				
Discussions Exams Discussions		The nature of the bush in dry areas Methods		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li><li>2 hours</li></ul>	Fourth week Fifth				
Exams		of spreading bushes and their		theoretica I	week				

	locations and the	3 hours
	impact of	practical
	fires and plant	
	adaptations	
	to fires	
Discussions	First month exam	2 hours Week
Exams		theoretica Six
		1
		3 hours
		practical
Discussions	Parasitic bush	2 hours Week
Exams		theoretica seven
		1
		3 hours
		practical
Discussions	Aquatic jungles	2 hours Week
Exams	and salt jungles	theoretica eight
		1
		3 hours
		practical
Discussions	Germination of	2 hours Week
Exams	bush seeds	theoretica Nine
	and factors	1
	affecting them	3 hours
	Dormancy in bush	practical
	seeds	
	and ways to	
	overcome it	
Discussions	Competition	2 hours Week
Exams	between bush	theoretica Ten
	and crops and	1
	factors	3 hours
	affecting them	practical

Discussions		Asexual			2 hours	Week
Exams		reproductio	n of		theoretica	Eleven
		the bush			I	
					3 hours	
					practical	
Discussions		Sexual			2 hours	Twelfth
Exams		reproductio	n of		theoretica	week
		the bush			Ι	
					3 hours	
					practical	
Discussions		Salt			2 hours	Thirteent
Exams		jungle			theoretica	h week
					I	
					3 hours	
					practical	
Discussions		Bioantagonism			2 hours	Fourteen
Exams					theoretica	th week
					I	
					3 hours	
					practical	
		Second mon	th exam			Week
						V
						ten
. Course Evaluation	on					
Distributing the	score out of	100 according	to the ta	asks assigne	ed to the stu	ident such
as daily prepara	tion, daily, or	al, monthly, w	ritten exa	ams, reports	etc	
. Learning and Te	eaching Reso	urces				
The book of bushes and ways to			Require	d textbooks	(methodolog	gy, if any)
combat them	•••					
│	uide to com	bating				
bushes						

From methodological books, auxiliary books, the Internet and scientific research	Main references (sources)
Scientific journals in the main specializations	Recommended books and references (scientific journals, reports)
Al-Muthanna University e-learning website https://agr.mu.edu.iq/	Electronic References, Websites

Course Title:					
Pasture Manag	gement				
Course Code	Course Code				
0014403	5				
Semester / Year					
Fourth					
Date of preparation of this description:					
2023-2024					
Number of Credit Hours (Total) / Number of Units (Total)					
Number of credit hours (total) 75 hours					
Course Administrator Name:					
Name: M.D.Ali Halil Naima Email: a	ali.algayashe@mu.edu.iq				
Course Objectives					
Study the scientific aspects related to the	Course Objectives				
exploitation and development of natural	This course description provides a b				
pastures in general and in Iraq in particular	summary of the most impor				
and how to develop and develop them.	characteristics of the course				
	The learning outcomes expected of				
	student to achieve are proof of whet				
	he has made the most of the availa				

			learning oppo	rtunities. It	must be lir
Teaching and L	earning Strate	egies			
1 - Explanation 1 - Explanation 2 - Lecture model 3 - Student group 4 - Practical lecture 9. Course	learning meth on and clarific ethod oups essons in lab	ods cation oratories			Strategy
Evaluation	Practical	Unit or subject	Required	Hours	The
method		name	Learning Outcome		week
Discussions	A visit to		5	2 hours	Firet
Exams	the college's fields and pastures to learn about natural growing plants and collect samples of	The importance of natural pastures, their spread and their relationship to other sciences		theoretica I 3 hours practical	week
Discussions	them Technical	Types of natural		2 hours	Second
Exams	methods in	pastures – qualities		theoretica	week

	the study	of good pasture		
	of pasture		3 hours	
	vegetation		practical	
Discussions	Technical		2 hours	Third
Exams	methods		theoretica	week
	and qualitative evaluation in the study of	Natural, biological, environmental and soil factors affecting pastures	l 3 hours practical	
	pastoral			
	plants		 	
Discussions		Pastoral plants and	2 hours	Fourth
Exams		their relationship to	theoretica	week
	Field visit	soil and water	I	
	to Almarai	maintenance - the	3 hours	
	station	importance of water	practical	
		and soil – erosion		
		processes		
Discussions	Animal	Vegetation Effects	2 hours	Fifth
Exams	load and	<ul> <li>Desertification –</li> </ul>	theoretica	week
	how to	Causes and	I	
	measure it	Treatments – Dune	3 hours	
		Stabilization	practical	
Discussions		5 First month exam	2 hours	Week
Exams			theoretica	Six
			1	
			3 hours	
			practical	
Discussions	Study of	Organizing grazing	2 hours	Week
Exams	the	<ul> <li>Components of</li> </ul>	theoretica	seven
	behavior of	vegetation in	1	
	animals in	pasture lands -	3 hours	
	pasture	The effect of	practical	
	pasiule	grazing on the		

	1	1	r		1
		productivity of			
		pastoral plants -			
		The effect of			
		grazing on root and			
		soil growth			
Discussions		Grazing intensity -		2 hours	Week
Exams		The effect of		theoretica	eight
	Compleme	grazing on pastoral		1	
	nt the	plant reproduction		3 hours	
	study of	and survival – The		practical	
	animal and	effect of grazing on			
	pasture	the vegetative			
	behavior	composition of			
		clothing			
Discussions	A visit to			2 hours	Week
Exams	the			theoretica	Nine
	livestock			1	
	fields of			3 hours	
	the college			practical	
	to watch	Grazing systems -		•	
	the	advantages and			
	behavior of	characteristics			
	sheep,				
	cows and				
	goats				
	durina				
	grazing				
Discussions		Exploitation of		2 hours	Week
Exams	Measurem	natural pastures -		theoretica	Ten
	ent of the	Exploitation		1	
	standard	criterion -		3 hours	
	of	Determination of		practical	
	exploitatio	feed exploitation -			
	n	Animal load			
Discussions	Care for	The state of natural		2 hours	Week
_1000001010				2	

Exame	poeturo	pactures	iudaina		theoretice	Flovor
	pasiure		juuyiiiy			CIEVEN
	animais	the state	or the			
		pastu	e		3 nours	
	<b></b>				practical	<b></b>
Discussions	Pasture	Classificat	ion of		2 hours	Twelfth
Exams	animal	pasture cor	pasture conditions		theoretica	week
	care	- directio	on of		I	
	supplemen	progress			3 hours	
	t				practical	
Discussions	How to	Grazino ar	eas in		2 hours	Thirteent
Exams	reseed	Irag – graz	zina in		theoretica	h week
	degraded	the Mesopotamian			I	
	nastures				3 hours	
	puoturoo	plain	۱ 		practical	
Discussions	Use of	Grazing in t	ha Iraai		2 hours	Fourtee
Exams	artificial				theoretica	nth
	cladding	valleys - C			I	week
	for				3 hours	
	degraded	mountains	or fraqi		practical	
	pastures	Kurdist	an			
		Second mo	nth			Week
		exam				V
						ten
. Course Evaluati	on					
Distributing the	score out of ]	100 according	to the ta	asks assigne	ed to the stu	dent such
as daily prepara	tion, daily, or	al, monthly, w	ritten exa	ams, reports	etc	
Learning and Te	eaching Reso	urces				
Management of	natural range	elands -	Require	d textbooks	(methodolo	av. if anv)
authorod by Dr	Domodon Al	Tikriti and				,
		- 1091				
University of Mc	u ⊼i~⊓assall sul	1701 -				
	d postures /	Dart Onal				
Fouuer crops ar	iu pastures (F					
authored by Dr.	Muhammad	AI-Sayed				

Radwan and Dr. Abdullah Qasim Al– Fakhri – 1975 – University of Mosul	
From methodological books, auxiliary books, the Internet and scientific research	Main references (sources)
Scientific journals in the main specializations	Recommended books and references (scientific journals, reports)
Al-Muthanna University e-learning website https://agr.mu.edu.iq/	Electronic References, Websites

Course Title:								
		English3						
Course Code								
		U024036						
Semester / Year	Semester / Year							
		Third / autumn						
The history of pr	reparation of this dea	scription						
		26/2/2024						
Available Attend	ance Forms							
		Came						
Number of Cred	it Hours (Total) / Nu	mber of Units (Total	)					
	2 hours th	eoretical Number of	units 3					
Course administ	rator's name (if more	e than one name)						
Name: Dr. Dr. A	hmed Raysan Moha	ammed Ali Email : a	hmedresan@n	nu.edu.io	9			
Course Objective	es							
Introduce the	student to how to	o create a Cours	e Objectives:					
question in Er	nglish and how	to conduct						
dialogues								
Teaching and Le	earning Strategies	i						
Audio methods (	teaching explanation	n of the subject)		Stra	tegy			
Blackboard writir	ng style							
The method of c	lirect dialogue betwe	een the teacher and	the student w	ʻith				
evaluation of the	student in the class	sroom participations						
Course Structure	9							
Evaluation	Learning method	Unit or subject	Required	Hours	The			
method		name	Learning		week			
			Outcomes					
Rapid exam	Lecture	How to create a	Theoretical	2	1			
		question	lecture					
Rapid exam	Lecture	Dialogues at the	Theoretical	2	2			

		meeting	lecture		
Rapid exam	Lecture	Talking about work and its types	Theoretical lecture	2	3
Rapid exam	Lecture	How to spend free time and holidays	Theoretical lecture	2	4
First month exam	Theoretical exam	examination	examination	2	5
Rapid exam	Lecture	Where to live using the phrases There is/ There are	Theoretical lecture	2	6
Rapid exam	Lecture	Cabulary and Pronunciation	Theoretical lecture	2	7
Rapid exam	Lecture	Meeting people	Theoretical lecture	2	8
Rapid exam	Lecture	The world of work	Theoretical lecture	2	9
Second month exam	Theoretical exam	examination	examination	2	10
Rapid exam	Lecture	Take it easy	Theoretical lecture	2	11
Rapid exam	Lecture	Where do you live	Theoretical lecture	2	12
Rapid exam	Lecture	Reading and Speaking	Theoretical lecture	2	13
Rapid exam	Lecture	Reading and Speaking	Theoretical lecture	2	14
Rapid exam	Lecture	Reading and Speaking	Theoretical lecture	2	15
. Course Evaluati	on	·			
Distributing the	score out of 100 acc	cording to the tasks	assigned to the	e studer	nt such

as daily preparation, daily, oral, monthly, written exan	ns, reports etc
. Learning and Teaching Resources	
Academic English, Level 1 by Alice Oshima	Required textbooks (methodolo
	if any)
	Main references (sources)
	Recommended books and
	references (scientific journals,
	reports)
https://www.ef.com/wwar/blog/language/dystopian-	Electronic References, Websites
books-to-learn-english/	

Course Name					
Crop Manag	gement				
Course Code					
002440	4				
Semester / Third Year					
2023-20	24				
Date of preparation of this description :					
In Classroom					
Number of Credit Hours (Total) / Number of Un	its (Total)				
Number of credit hours (total) 75 hours					
Course Administrator Name:					
Name: Prof. Dr.Ali Rahim Karim Email: ali_rahe	em2002@mu.edu.iq				
Course Objectives					
- Enable the student to identify the good	Course Objectives				
management of the field	This course description provides a b				
<ul> <li>Enable the student to know the</li> </ul>	summary of the most import				
environmental factors and soil factors	characteristics of the course				
appropriate to manage the field perfectly	The learning outcomes expected of				
- Enable the student to identify and pay	student to achieve are proof of whet				

attention to soi – Enable the s management n in quantity and	I and crop se tudent good f nethods to ind quality	rvice operations h field le crease the yield to	e has made earning oppo o the program	e the most ortunities. If m descriptio	of the availa t must be lin on.
Teaching and Le Teaching and le 1- Explanatio 2-Lecture me 3-Student gro 4-Practical le	earning Strate learning meth n and clarifi thod oups ssons in lab	egies ods cation oratories			Strategy
Course Structur	е				
Evaluation method	Practical	Unit or subject name	Required Learning Outcome s	Hours	The week
Discussions Exams	Tillage Soil Service Operation s	Introduction, Environmental factors and their relationship to the growth of field crops		2 hours theoretica I 3 hours practical	First week
Discussions Exams	Soil Service Processes Smoothing and leveling	Factors Controlling Field Crop Productivity		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	S Second week

Discussions	Cultivation	Soil factors (soil	2 hours	Third
Exams	methods	construction) soil	theoretica	week
	types and	weaving, soil	I	
	importanc	salinity, soil acidity	3 hours	
	е		practical	
Discussions	Irrigation	Selection of plant	2 hours	Fourth
Exams	and	species suitable for	theoretica	week
	modern	the surrounding	1	
	irrigation	environment	3 hours	
	mothodo		practical	
	methods			
Discussions	Salinity	The effect of	2 hours	Fifth
Exams	and its	planting dates on	theoretica	week
	direct and	field crop growth,	1	
	indirect	sowing quantity,	3 hours	
	effects	plant density.	practical	
Discussions	Organic	First month exam	2 hours	Week
Exams	agriculture		theoretica	Six
	, its		I	
	importanc		3 hours	
	e and		practical	
	benefits			
Discussions	Biofertilize	Growth and	2 hours	Week
Exams	rs and	development of	theoretica	seven
	their types	crops	1	
			3 hours	
			practical	
Discussions	Drought	Crop management	2 hours	Week
Exams	and its	means managing	theoretica	eight
	impact on	the root system and	I	
	field crops	the vegetative	3 hours	
		system	practical	
Discussions	Jungle	plant nutrition	2 hours	Week
Exams	and ways		theoretica	Nine
	to combat		1	

	_						
	it			3 hours			
				practical			
Discussions		How to calculate		2 hours	Week		
Exams		the quantities of		theoretica	Ten		
		chemical fertilizers		I			
				3 hours			
				practical			
Discussions		Water and its		2 hours	Week		
Exams		importance in plant		theoretica	Eleven		
		life / irrigation		I			
		methods		3 hours			
				practical			
Discussions	Types of			2 hours	Twelfth		
Exams	feed and			theoretica	week		
	methods	Organic Agriculture		I			
	of	,		3 hours			
	preservati			practical			
	on						
Discussions				2 hours	Thirteent		
Exams		Desis shisetiyas of		theoretica	h week		
		Basic objectives of		I			
		organic production		3 hours			
				practical			
Discussions	Preparing	Collection,		2 hours	Fourteen		
Exams	programs	preparation and		theoretica	th week		
	for field	storage of crops		I			
	crops			3 hours			
				practical			
		Second month			Week		
		exam			V		
					ten		
. Course Evaluati	on	·					
Distributing the	score out of	100 according to the t	asks assign	ed to the stu	ident such		
as daily preparation, daily, oral, monthly, written exams, reports etc							

Learning and Teaching Resources						
Management of natural rangelands -	Required textbooks (methodology, if any)					
authored by Dr. Ramadan Al-Tikriti and						
Mr. Abbas Mahdi Al-Hassan - 1981 -						
University of Mosul						
From methodological books, auxiliary	Main references (sources)					
books, the Internet and scientific						
research						
Scientific journals in the main	Recommended books and references					
specializations	(scientific journals, reports)					
Al–Muthanna University e–learning	Electronic References, Websites					
website						
https://agr.mu.edu.iq/						

1. Course Title:								
		Crop q	ua	llity				
2. Course Coo	de							
0014406								
3. Semester /	Year							
		Fou	rth					
4. Date of pre	paration of this	description : 202	23-	-2024				
5. Number of	Credit Hours (	Fotal) / Number of	fL	Jnits (Total)				
Number of	credit hours (to	otal) 75 hours						
6. Course Adr	ministrator Nam	ie:						
Name: Prof. Dr	.Ali Rahim Kari	m Email: ali_rahe	en	m2002@mu.e	edu.iq			
Course Objectiv	ves							
Enable the student to identify the     Course Objectives				tives				
qualitative cha	racteristics of fi	ield crops in	This course description provides a b					
general			summary of the most impor					
- Enable the s	tudent to know	the economic	с	characteristics of the course				
importance and	d qualitative ch	aracteristics of	The learning outcomes expected of					
minority crops			s	tudent to acl	nieve are pr	are proof of whet		
- Enable the s	tudent to know	the chemical	h	ie has made	the most c	of the availa		
properties of g	rains and seed	s	le	earning oppo	rtunities. It	must be linl		
- Enable the s	tudent to know	and conduct	to	o the progran	n descriptior	lescription.		
chemical analy	zes of crop se	eds						
8. Teaching a	nd Learning St	rategies						
Teaching	and learning m	ethods				Strategy		
1– Explar	nation and cla	rification						
2-Lecture	e method							
3-Studen	t groups							
4-Practic	al lessons in	laboratories						
9. Course Stru	ucture							
Evaluation	Practical	Unit or subject		Required	Hours	The		
method		name		Learning		week		
				Outcomes				

Discussions	The concept			2 hours	First
Fxams	of food			theoretic	week
	security			al	Week
	Causes of			3 hours	
	the global	Introduction to		practical	
	food crisis	Seed Production			
		and Food			
	Points to	Security			
	focus on to	Security			
	enhance				
	food				
	security				
Discussions	Stages of			2 hours	Second
Exams	Stages of	Seed growth and		theoretic	week
	seed	formation		al	
	production	lonnation		3 hours	
				practical	
Discussions				2 hours	Third
Exams	Insemination	Venus and its		theoretic	week
	and	parts		al	
	fertilization	parto		3 hours	
				practical	
Discussions				2 hours	Fourth
Exams	Seed			theoretic	week
	diagnosis	Seed composition		al	
				3 hours	
				practical	
Discussions	Carbohydrat			2 hours	Fifth
Exams	es	Chemical		theoretic	week
	Leopids	composition of		al	
	Proteins	seeds		3 hours	
	Vitamins			practical	
Discussions		First month exam		2 hours	Week
Exams				theoretic	Six

			a	
			3 hours	
			practical	
Discussions	Proteins		2 hours	Week
Exams	Oils		theoretic	seven
	Carbohydrat	Spelt crop	al	
	es Vitamins	Open crop	3 hours	
	Nutritional		practical	
	problems			
Discussions	Proteins		2 hours	Week
Exams	Oils		theoretic	eight
	Carbohydrat	Pico crop	al	
	es Vitamins	Rice crop	3 hours	
	Nutritional		practical	
	problems			
Discussions	Proteins	Yellow corn crop	2 hours	Week
Exams	Oils		theoretic	Nine
	Carbohydrat		al	
	es Vitamins		3 hours	
	Nutritional		practical	
	problems			
Discussions	Proteins		2 hours	Week
Exams	Oils		theoretic	Ten
	Carbohydrat		al	
	es Vitamins	Barley crop	3 hours	
	Nutritional		practical	
	problems			
Discussions	Proteins		2 hours	Week
Exams	Oils		theoretic	Eleven
	Carbohydrat		al	
	es Vitamins	Sunflower crop	3 hours	
	Nutritional		practical	
	problems			
Discussions	Proteins	Field pistachio	2 hours	Twelfth
Exams	Oils	crop	theoretic	week

				[	1	
	Carbohydrat				al	
	es Vitamins				3 hours	
	Nutritional				practical	
	problems					
Discussions	Proteins				2 hours	Thirteent
Exams	Oils	Raneseed crop			theoretic	h week
	Carbohydrat			al		
	es Vitamins	Rapeseed crop		3 hours		
	Nutritional				practical	
	problems					
Discussions					2 hours	Fourteen
Exams					theoretic	th week
					al	
					3 hours	
					practical	
		Second m	onth			Week
		exam				V
						ten
10. Course Evalu	uation					
Distributing t such as daily	he score out c preparation, d	of 100 accor laily, oral, m	rding to onthly, v	the tasks as vritten exams	ssigned to t	he student . etc
11. Learning and	I Teaching Res	ources				
Desai, B. B. 2	2004. Seeds H	andbook;	Require	ed textbooks	(methodolo	gy, if any)
Bilogy, Produ	uction, Process	ing, and			·	,
Storage. 2nd e	edn. Marcel De	ekker, Inc.				
New York, USA	A. ISBN: 0-824	47-4800-				
×	K. pp. 787.					
Agrawal R.L. 2010. Seed Technology.						
2nd edition. Oxford and IBH publishing						
CO.PVT. LTD. New Delhi, India. ISBN						
978-81-204-0	994-1.pp.82	9.				
Dissortation the	esis and papers	5.				

<b>F</b>	
From methodological books, auxiliary	Main references (sources)
books, the Internet and scientific	
research	
Scientific journals in the main specializations	Recommended books and references (scientific journals, reports)
Al–Muthanna University e–learning website	Electronic References, Websites
https://agr.mu.edu.iq/	

1. Course Title:							
Land farming							
2. Course Coo	de						
		0014	405	i			
3. Semester /	Year						
		Fou	ırth				
4. Date of pre	paration of t	his description:					
		2023-	-202	24			
5. Number of	Credit Hours	s (Total) / Number of	f Un	its (Total)			
Number of	credit hours	(total) 75 hours					
6. Course Adr	ninistrator N	ame:					
Name: A	ssoc. Prof.	Haider Abdul Hussai	n M	ohsen	Email	:	
7. Course Obj	ectives						
1. Develop te	eaching curri	cula in	Co	ourse Objecti	ves		
coordination	with higher a	departments	Th	is course de	escription	provides	a b
- Develop te	aching curric	summary of the most impo				nport	
department s	imilar to the	work environment	characteristics of the course				
- Providing t	he student w	vith the skill in	Th	e learning o	outcomes	expected	d of
land reclama	tion and des	ert land cultivation	stı	udent to ach	ieve are	proof of	whet
- Creating a	photo album	n showing the	he	has made	the most	of the a	availa
plants used (	evidence for	[·] cultivation) and	lea	arning oppor	tunities. I	t must b	e linl
the environm	ental factors	that suit them	to	the program	descriptio	on.	
5. Study the	problems re	lated to pests and					
diseases of e	each field cro	р					
8. Teaching	and Learnin	g Strategies					
Teaching and	d learning m	ethods				Strategy	
1 – Explanat	ion and cla	rification					
2-Lecture method							
3-Student groups							
4-Practical		aporatories					
9. Course	Structure				11.		
Evaluation	Learning	Unit or subject nam	ie	Required	Hours	The	

method	method		Learning Outcomes		week
Discussions		Crop production	Land	2 hours	First
Exams		factors	farming	theoretic	week
		Survey and diagnosis		al	
		of aquatic		3 hours	
		environment plants in		practical	
		rivers and waterways			
Discussions		Carbon metabolism in	Land	2 hours	Second
Exams		crop production	farming	theoretic	week
		Comparison of		al	
		germination, growth		3 hours	
		and development of		practical	
		plant stages in local			
		soil planted with			
		wheat and			
		comparison with non-			
		saline			
Discussions		Productivity Factors	Land	2 hours	Third
Exams		Comparing the effect	farming	theoretic	week
		of calcareous and		al	
		gypsum soils with		3 hours	
		ordinary soils planted		practical	
		with another crop,			
Discussions		Nitrogen stabilization	Land	2 hours	Fourth
Exams		and increased	farming	theoretic	week
		productivity		al	
		Comparison of the		3 hours	
		amount of irrigation		practical	
		by conducting an			
		experiment			
		Irrigation is sufficient			

	and another is not			
	sufficient for the same			
	crop			
Discussions	The relationship of	Land	2 hours	Fifth
Exams	energy spent to crop	farming	theoretic	week
	productivity		al	
	Comparison of growth		3 hours	
	parameters in		practical	
	ordinary and fertile			
	soils			
Discussions	First month exam	Land	2 hours	Week
Exams		farming	theoretic	Six
			al	
			3 hours	
			practical	
Discussions	Post-harvest losses	Land	2 hours	Week
Exams	Comparison of growth	farming	theoretic	seven
	standards for several		al	
	crops grown in good		3 hours	
	soil to determine the		practical	
	reasons for the			
	difference in			
	productivity			
Discussions		Land	2 hours	Week
Exams	Branching in crop	farming	theoretic	eight
	plants and their		al	
	relationship to		3 hours	
	productivity		practical	
Discussions	Disadvantages of	Land	2 hours	Week
Exams	sandy and clay lands	farming	theoretic	Nine
			al	

		[			1
				3 hours	
				practical	
Discussions		Land defect	Land	2 hours	Week
Exams		remediation	farming	theoretic	Ten
				al	
				3 hours	
				practical	
Discussions		Farming land with	Land	2 hours	Week
Exams		topographic defects	farming	theoretic	Eleven
				al	
				3 hours	
				practical	
Discussions		Disadvantages of	Land	2 hours	Twelfth
Exams		limestone and	farming	theoretic	week
		gypsum lands		al	
				3 hours	
				practical	
Discussions		Agriculture Guides	Land	2 hours	Thirteent
Exams			farming	theoretic	h week
				al	
				3 hours	
				practical	
Discussions		Soil biology	Land	2 hours	Fourteen
Exams			farming	theoretic	th week
				al	
				3 hours	
				practical	
		Second month exam	Land farmir		Week
					V
					ten
10. Course E	valuation				

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports .... etc

. Learning and Teaching Resources			
	Required textbooks (methodology, if any)		
From methodological books,	Main references (sources)		
auxiliary books, the Internet and			
scientific research			
Scientific journals in the main	Recommended books and references		
specializations	(scientific journals, reports)		
Al-Muthanna University e-learning	Electronic References, Websites		
website			
https://agr.mu.edu.iq/			

1. Course Title:					
Weed Control					
2. Course Code					
0024403					
3. Semester / Year					
Fourth					
4. Date of preparation of this description :					
2023-2024					
5. Number of Credit Hours (Total) / Number of Units	(Total)				
Number of credit hours (total) 75 hours					
6. Course Administrator Name:					
Name: A. d.Faisal Mahbas Meaning of Tah	er	Ema			
Faisal.taher@mu.edu.iq					
Course Objectives	,,				
Enable the student to understand, understand ar	<b>d</b> Course Objecti	ves			
identify the nature of bush life, the benefits and	This course de	escription provide			
harms of bushes, methods of combating them,	brief summa	ry of the m			
including agricultural, mechanical, biological and	impo <mark>rtant cha</mark>	racteristics of			
chemical methods, in addition to an extensive st	<b>uchy</b> urse				
on pesticide groups	The learning	outcomes expec			
and ways to add them to combat bushes	of the student	to achieve are pr			
	of whether he	has made the m			
	of the a	ivailable learn			
	opportunities.	It must be linked			
	the program de	escription.			
Teaching and Learning Strategies					
Teaching and learning offactions		Strategy			
1 - Explanation and clarification		Olialogy			
2-Lecture method					
3-Student groups					
4-Practical lessons in laboratories					
9. Course Structure					
Evaluation method Learning Unit or subject name	Required Hou	rs The week			

	method		Learning		
			Outcomes		<b>T</b>
Discussions Exams		Introduction and some definitions and the importance of the bush and its harms and benefits	nes	2 hours theoretical 3 hours practical	First week
Discussions Exams		Acclimatization of bush plants		2 hours theoretical 3 hours practical	Second week
Discussions Exams		Competition between the bush		2 hours theoretical 3 hours practical	Third week
Discussions Exams		Methods of spreading bushes and their locations and the impact of fires and plant adaptations to fires		2 hours theoretical 3 hours practical	Fourth week
Discussions Exams		Mechanical control methods		2 hours theoretical 3 hours practical	Fifth week
Discussions Exams		First month exam		2 hours theoretical 3 hours practical	Week Six
Discussions Exams		Chemical Control		2 hours theoretical 3 hours practical	Week seven
Discussions Exams		Pesticide division		2 hours theoretical 3 hours practical	Week eight
Discussions Exams		Absorption and transmission of pesticides		2 hours theoretical 3 hours practical	Week Nine
Discussions Exams		Absorption and transmission of pesticides		2 hours theoretical 3 hours practical	Week Ten
Discussions Exams		Absorption and transmission of pesticides		2 hours theoretical 3 hours practical	Week Eleven
Discussions Exams		Electives		2 hours theoretical 3 hours practical	Twelfth week
Discussions Exams		Electives		2 hours theoretical 3 hours practical	Thirteenth week
Discussions Exams		Sustainability		2 hours theoretical 3 hours practical	Fourteenth week
		Second month exam			Week V ten
10. Course Evalu	uation				

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports .... etc

11. Learning and Teaching Resources	
The book of bushes and ways to combat	Required textbooks (methodology, if an
them	
<ul> <li>a practical guide to combating bushes</li> </ul>	
From methodological books, auxiliary	Main references (sources)
books, the Internet and scientific	
research	
Scientific journals in the main	Recommended books and references
specializations	(scientific journals, reports)
Al-Muthanna University e-learning	Electronic References, Websites
website	
https://agr.mu.edu.iq/	

1.	1. Course Title:								
			English4						
2.	Course Code								
			U011405						
3.	. Semester / Year								
	Fourth / autumn								
4.	The history o	f preparation of this	s description						
			26/2/2024						
5.	Available Atte	endance Forms							
			Came						
6.	Number of C	redit Hours (Total)	/ Number of Units (	(Total)					
		2 hours t	heoretical Number	of units 3					
7.	Course adm	ninistrator's name (i	f more than one na	ime)					
	Name: Dr. I	Dr. Ahmed Raysan	Mohammed Ali En	nail : ahmedresa	n@mu.e	du.iq			
8.	Course Obje	ectives							
	Identify the	importance of som	e dialogue using	Course Obje	ectives:				
	English grar	mmar							
9.	Teaching ar	nd Learning Strateg	ies						
	Audio metho	ods (teaching expla	nation of the subje	ct)		Strateg			
	Blackboard	writing style							
	The method	l of direct dialogue	between the teach	er and the stude	nt v				
	the evaluation	on of the student in	the classroom par	ticipations					
10.	Course Stru	icture							
Ev	aluation	Learning method	Unit or subject	Required	Hours	The			
me	ethod		name	Learning		week			
				Outcomes					
Ra	pid exam	Lecture	Getting to know	Theoretical	2	1			
			you	lecture					
Ra	pid exam	Lecture	The way we live	Theoretical	2	2			
				lecture					
Ra	pid exam	Lecture	It All Went Wrong	g Theoretical	2	3			

			lecture		
Rapid exam	Lecture	Let's go shopping	g! Theoretical	2	4
•			lecture		
First month	Theoretical	examination	examination	2	5
exam	exam				
Rapid exam	Lecture	Let's go shopping	g! Theoretical	2	6
			lecture		
Rapid exam	Lecture	Tell me! What's	it Theoretical	2	7
		like?	lecture		
Rapid exam	Lecture	Tell me! What's	it Theoretical	2	8
		like?	lecture		
Rapid exam	Lecture	Famous couples	5 Theoretical	2	9
			lecture		
Second month	Theoretical	examination	examination	2	10
exam	exam				
Rapid exam	Lecture	Famous couples	5 Theoretical	2	11
			lecture		
Rapid exam	Lecture	Do's and don'ts	Theoretical	2	12
			lecture		
Rapid exam	Lecture	Going places	Theoretical	2	13
			lecture		
Rapid exam	Lecture	Going places	Theoretical	2	14
			lecture		
Rapid exam	Lecture	Scared to death	Theoretical	2	15
			lecture		
11. Course Eva	aluation				
Distributing	the score out of 1	00 according to the	e tasks assigned	to the s	student
such as da	ily preparation, daily	y, oral, monthly, wr	itten exams, repo	orts e	etc
12. Learning ar	nd Teaching Resou	rces			
a Academic Engli	ish, Level 4 by Alice	e Oshima	Required textbo	ooks (me	ethodolo
			if any)		
			Main references	s (source	es)
			Recommended	books	and
			references (scie	entific jo	urnals,
			reports)		

https://www.ef.com/wwar/blog/language/dystopian-	Electronic References, Websites
books-to-learn-english/	

Course Title:	
Medicinal plar	nts
Course Code	
0024401	
Semester / First Year	
CAME	
Date of preparation of this description :	
2023-2024	
Number of Credit Hours (Total) / Number of Units	(Total)
Number of credit hours (total) 75 hours	
Course Administrator Name:	
Name: A.Dr. Qasim Ajel Shanawa Em	ail: <b>qasim.ajel@mu.edu.iq</b>
Course Objectives	
<ul> <li>1- Identify medicinal and aromatic plants .</li> <li>2- Studying the impact of environmental factors on the growth and production of medicinal and aromatic plants and their content of active ingredients.</li> <li>3- Identify the active compounds in medicinal plants and their physiological and medicinal effect.</li> <li>4- How to diagnose and extract effective compounds in medicinal plants.</li> </ul>	Course Objectives This course description provides brief summary of the most import characteristics of the course The learning outcomes expected the student to achieve are proof whether he has made the most the available learning opportuniti It must be linked to the progr description.
Teaching and Learning Strategies	·
Teaching and learning methods	Strategy

- 1- Explanation and clarification-
- 2- Lecture method-
- 3- Student groups-
- 4- Practical lessons in laboratories

#### **Course Structure** 9. **Evaluation method** Practical Unit or subject name Required Hours The week Learning Outcomes Discussions First Methods of cultivation 2 hours Exams and reproduction of theoretical week medicinal and 3 hours aromatic plants: Field practical practice for growing seeds of some medicinal plants Introduction and a brief (sexual reproduction) history of medicinal and - The practice of aromatic plants growing plants by vegetative propagation methods - Identifying models of seeds of a number of fold and aromatic plants Discussions Addressing the 2 hours Second Exams process of fertilizing theoretical week medicinal plants and 3 hours practicing them practical practically – as well Economic importance as the practical and medicinal uses of application of plant medicinal and aromatic plants irrigation and the effect of increasing water and its lack of active ingredients in the plant Discussions Division and 2 hours Third Conducting a field Exams classification of theoretical week observation to identify medicinal and aromatic 3 hours the medicinal and plants: division by life practical aromatic plants cycle of medicinal plant cultivated at the - division of medicinal Agricultural Research plants by part used -Station in the college. division of medicinal plants according to their

		meanings of secondary		
		metabolic compounds		
Discussions Exams	Preparation of medicinal and aromatic plants for marketing: collection and harvesting – methods and date of collection of the crop and addressing the general rules for collecting medicinal plants and according to the part used – leaves – flowers – fruits – seeds – bark – roots	Addition: Division and classification of medicinal and aromatic plants: Botanical division of medicinal plants	2 hours theoretical 3 hours practical	Fourth week
Discussions Exams	Addressing the cleaning and screening process that takes place on medicinal and aromatic plants after collecting and harvesting them from the field – methods of drying medicinal plants – natural drying – industrial drying – packaging of medicinal plants – storage of medicinal plants	Environmental and topographic factors affecting the production of medicinal and aromatic plants: light – temperature – soil – irrigation – height and fall above sea level – proximity and distance from the equator	2 hours theoretical 3 hours practical	Fifth week
Discussions Exams	Conducting a scientific trip to the wild areas outside the governorate to identify wild growing plants and compare them with the cultured	Factors affecting the concentration of the active substance in the medicinal plant: the evolutionary stage of the plant – the date and time of collection – the process of drying the plant – the genetic factor – environmental stresses Optimal use of medicinal and aromatic plants: internal uses – external uses	2 hours theoretical 3 hours practical	Week Six
Discussions Exams	First month exam	First month exam	2 hours theoretical 3 hours practical	Week seven

Disquesiens	Motheda of extracting		2 hours	Week		
Exame	volatile oile. Eirst		2 nours	eight		
Exams	Distillation - Water	Active ingredients in	2 hours	eigin		
	distillation - Steam	medicinal and aromatic	nractical			
	distillation -		practical			
	Distillation with water	volatile oils – general				
	ond steem tegether					
	and steam together -					
	and conducted	chemistry of volatile oils				
	laboratory					
Discussions	Second: Extraction of		2 hours	Week		
Exams	volatile oils using	Glycosides: general	theoretical	Nine		
	solvents: volatile	characteristics – medical	3 hours			
	solvents – non–	uses – Sections: Steroid	practical			
	volatile solvents -	glycosides -				
	fatty absorption	Anthraquinoin –				
	method – solvent	flavonoids - sulfur -				
	soaking method –	sapony – phenolic –				
	solvent spraying	alcoholic – aldehyde –				
	method	cyanidia				
Discussions		Alkaloids: chemical	2 hours	Week		
Exams	Third: Acupuncture	physical qualities –	theoretical	Ten		
	method:	benefits – amino	3 hours			
	SpongeDrainage	alkaloids – tropan –	practical			
	method – automatic	pyridine – quinoline –				
	acupuncture method	isokineolin – indole –				
		purine – steroid				
Discussions		Phenols: general	2 hours	Week		
Exams		characteristics – their	theoretical	Eleven		
	Estimation of	divisions – simple	3 hours			
	Percentage of Volatile	phenols – phenolic acids	practical			
	Oil by Clevenger –	- phenyl acids -	•			
	Preservation and	phenvlbronoids –				
	Storage of Volatile	naphthaguinone –				
	Oils	xanthonates – stelipins				
		- anthraquinoans				
Discussions		Flavonoids: chemical	2 hours	Twelfth		
Exams		physical characteristics	theoretical	week		
		<ul> <li>their divisions – group</li> </ul>	3 hours			
		of flavones – flavanones	practical			
	Extraction of phenols,	<ul> <li>– flavanols – isofafones</li> </ul>				
	Extraction of phenols, alkaloids and lipids by	– flavanols – isofafones – calcon – uron –				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	– flavanols – isofafones – calcon – uron – anthocyanins				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	– flavanols – isofafones – calcon – uron – anthocyanins Tannins: chemical				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	– flavanols – isofafones – calcon – uron – anthocyanins Tannins: chemical physical properties –				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	<ul> <li>flavanols – isofafones</li> <li>calcon – uron –</li> <li>anthocyanins</li> <li>Tannins: chemical</li> <li>physical properties –</li> <li>benefits – division –</li> </ul>				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	<ul> <li>flavanols – isofafones</li> <li>calcon – uron –</li> <li>anthocyanins</li> <li>Tannins: chemical</li> <li>physical properties –</li> <li>benefits – division –</li> <li>hydrolyzable tannins –</li> </ul>				
	Extraction of phenols, alkaloids and lipids by Soxhllet device	<ul> <li>flavanols – isofafones</li> <li>calcon – uron – anthocyanins</li> <li>Tannins: chemical</li> <li>physical properties –</li> <li>benefits – division –</li> <li>hydrolyzable tannins –</li> <li>non–hydrolytic tannins</li> </ul>				
Discussions	Extraction of phenols, alkaloids and lipids by Soxhllet device	<ul> <li>flavanols – isofafones</li> <li>calcon – uron –</li> <li>anthocyanins</li> <li>Tannins: chemical</li> <li>physical properties –</li> <li>benefits – division –</li> <li>hydrolyzable tannins –</li> <li>non–hydrolytic tannins</li> <li>Fixed oils and fats:</li> </ul>	2 hours	Thirteent		
Discussions Exams	Extraction of phenols, alkaloids and lipids by Soxhllet device Method of disposal of solvents used in the	<ul> <li>flavanols – isofafones</li> <li>calcon – uron – anthocyanins</li> <li>Tannins: chemical</li> <li>physical properties –</li> <li>benefits – division –</li> <li>hydrolyzable tannins –</li> <li>non–hydrolytic tannins</li> <li>Fixed oils and fats:</li> <li>general characteristics –</li> </ul>	2 hours theoretical	Thirteent h week		
Г		1		[	1	1
--------------------	---------------------------------	--------------------------------	-------------------------------	--------------	------------------------	-------------
	compounds by	classific	cation of		practical	
	Vacuum Evaporator	medical be	nefit of fixed			
		oils – t	he most			
		important fix	ked oils used			
Discussions		in the me	dical field		2 h a una	Foundation
Exams					2 nours theoretical	h week
	Second month exam	Second m	onth exam		3 hours	
					practical	
		Description	of some ants and			Week V
		their importa	ance:			ten
		peppermint	<ul> <li>coriander</li> </ul>			
	Fixed oil extraction	<ul> <li>star anise</li> </ul>	– seal –			
	methods	black musta	negar – rd – saffron			
		– cumin – s	weet seed -			
		licorice – bla	ack seed –			
		caisom				
10. Course Evalua	ation					
Distributing the s	core out of 100 ac	cording to	the tasks	assigned to	o the stude	ent such
as daily preparat	ion, daily, oral, mo	nthly, writt	en exams,	reports	etc	
11. Learning and	Teaching Resource	es				
There is no meth	nodological book in	this	Required	textbooks (	methodolo	ogy, if any
specialty, but the	ere are auxiliary bo	oks,				
including:						
1- Fundamentals	s of Medicinal Plan	ts and				
Their Active Com	npounds (2018) Au	Ithor				
Assistant Profess	sor Dr. Maher Ham	nid				
Salman						
2- Medicinal pla	nts, their cultivatior	n and				
components (198	81) Author Prof. Di	r. Fawzi				
Taha Qutb						
			Main refe	erences (sou	urces)	
Scientific jou	Scientific journals in the main		Recomm	ended book	s and re	ferences
specializations			(scientific	journals, re	eports)	
			<b></b>			
AI-Muthanna	University e-	learning	Electronic	c Reference	s, Website	es
	du ia/					
nttps://agr.mu.eo	pi.uc/					

	nt nhuaialagu	_
	nt physiology	_
2. Course Code	0014402	_
2 Semester / Veer	0014402	_
	tump/Fourth	_
4 Date of preparation of this description	• 2023-2024	_
	. 2023 2024	
5. Number of Credit Hours (Total) / Num	ber of Units (Total)	
Number of credit hours (total) 75 hou	Irs	
6. Course Administrator Name:		
Name: Assoc. Prof. Nasser Habib Mu	ihaibis Email: naasshb@mu.edu.iq	
7. Course Objectives		
Enable the student to learn about plant	Course Objectives	
physiology in general and its	This course description provides	a b
applications in various agricultural	summary of the most im	nport
experiments	characteristics of the course	
- Enable the student to know how to	The learning outcomes expected	of
prepare solutions, their uses and apply	student to achieve are proof of whe	ther
them in the agricultural field correctly	has made the most of the available I	earn
- Providing the student with the skills	opportunities. It must be linked	to
of dealing with the concentrations of	program description.	
solutions		
8. Teaching and Learning Strategies		
Teaching and learning methods		St Teaching and I a ed
5- Explanation and clarification-		
6- Lecture method-		
7- Student groups-		
8- Practical lessons in laboratories	S	
9–		

9. Cour	se Structure	)			
Evaluation method	Practical	Unit or subject name	Require d Learnin g Outcom es	Hours	The week
Discussions Exams	Laboratory Guidelines and Definitional Terminology	Definition of plant physiology and the basic rules of this science		2 hours theoretical 3 hours practical	First week
Discussions Exams	How to prepare solutions	Colloidal solutions and systems		2 hours theoretical 3 hours practical	Second week
Discussions Exams	Types of solutions	Water Relations		2 hours theoretical 3 hours practical	Third week
Discussions Exams	Types of solution concentratio ns	Absorption and transfer of water and mineral elements		2 hours theoretical 3 hours practical	Fourth week
Discussions Exams	Effect of salt concentratio ns on seed germination	Supplement the absorption and transfer of water and mineral elements		2 hours theoretical 3 hours practical	Fifth week
Discussions Exams	The effect of acidity and alkalinity on the germination and growth of some plants	Photosynthesis (carbon)		2 hours theoretical 3 hours practical	Week Six
Discussions Exams	How to measure growth qualities	Complement to the topic of photosynthesis		2 hours theoretical 3 hours practical	Week seven
Discussions Exams	Effect of macro- and micronutrien ts on plant growth	respiration		2 hours theoretical 3 hours practical	Week eight
Discussions Exams	The relationship between light interception and plant growth	Metabolism (construction)		2 hours theoretical 3 hours practical	Week Nine
Discussions Exams	Measuremen t of chlorophyll in a plant	Plant Nutrition		2 hours theoretical 3 hours practical	Week Ten
Discussions Exams	The effect of phytohormo nes on the growth of some plants	Nitrogen biostabilization		2 hours theoretical 3 hours practical	Week Eleven
Discussions Exams	Studying the phenomenon of imbibing and osmosis and conducting some laboratory experiments on the subject	Growth and evolution		2 hours theoretical 3 hours practical	Twelfth week
Discussions Exams	Studying the phenomenon of diffusion and plasma and conducting	Phytohormones		2 hours theoretical 3 hours practical	Thirteenth week

Discussions Exams	some laboratory experiments on the subject A field visit to the fields to get to know some nhysiological	Physiology	of crops under stress		2 hours theoretical 3 hours practical	Fourteenth week
	phenomena phenomena Review, exams and visiting experimental fields	Types of stress - stress effects - stress tolerance mechanisms				Week V ten
10. Cours	se Evaluatio	on				
Distributir	ng the score	out of 10	0 according to the	e tasks a	assigned to the	e student such
as daily p	preparation,	daily, oral	, monthly, written	exams, ı	eports etc	;
11. Learning and Teaching Resources						
The Book	of Plant Pl	nysiology	Required textboo	oks (metl	nodology, if an	y)
<ul> <li>written</li> </ul>	by Dr. Abo	lul Azim				
	Katem					
Plant Phy	siology Boc	ok –				
Written by	y Dr. Husse	in				
Saeed an	id Dr. Ismai	I Nada				
			Main references	(sources	6)	
Scientific	journals	in the	Recommended	books	and reference	ces (scientific
main spe	ecializations	5	journals, reports	)		
Al-Muth	anna Unive	ersity e-	Electronic Refere	ences, W	/ebsites	
learning	website					
https://ag	r.mu.edu.iq	I/				

1. Course Title:	1. Course Title:					
Growth Regulators						
2. Course Code						
		002440	2			
3. Semester / Ye	ear:					
		Spring/ Fo	ourth	l		
4. Date of prepar	ration of this descr	iption : 2023-	202	4		
5. Number of Cre	edit Hours (Total) /	/ Number of U	nits	(Total)		
Number of cre	edit hours (total) 7	5 hours				
6. Course Admin	istrator Name:					
Name: Assoc.	Prof. Nasser Hab	oib Muhaibis Ei	mail	: naasshb@	@mu.edu	.iq
7. Course Object	tives					
Enable the stu	dent to identify p	plant growth	Сс	ourse Obje	ctives	
regulators in ge	eneral and its ap	plications in	This course description provides			
various agricultu	ural experiments		bri	ief summa	ry of the	most import
- Enable the stu	udent to know and	d understand	ch	aracteristic	s of the c	ourse
its uses and app	plication in the agr	icultural field	The learning outcomes expected			
correctly			the	e student	to achiev	ve are proof
- Providing the	e student with t	he skills of	wł	nether he h	nas made	the most of
dealing with plar	nt growth regulato	rs	av	ailable le	arning c	opportunities.
			m	ust be l	inked to	the progr
			de	escription.		
8. Teaching and	d Learning Strateg	ies				
1- Teaching	g and learning met	hods				Strategy
2– Explana	ation and clarifica	ation-				
3- Lecture	method-					
4- Student	4– Student groups–Practical lessons in laboratories					
9. Course Stru	ucture					
Evaluation F	Practical	Unit or subject	ct	Required	Hours	The
method		name		Learning		week

			Outcome		
			Ouicome		
- i		<b></b>	S		
Discussions	Laboratory	About		2 hours	First
Exams	Guidelines and	phytohormones		theoretic	week
	Definitional	discoveries		al	
	Terminology			3 hours	
				practical	
Discussions	Identify the	Types of plant		2 hours	Second
Exams	growth regulator	growth		theoretic	week
	/ oxins IAA and	regulators		al	
	its physiological			3 hours	
	effects on plants			practical	
Discussions	Conducting	Growth		2 hours	Third
Exams	laboratory	hormones and		theoretic	week
	experiments on	leg elongation		al	
	the physiological			3 hours	
	effects of oxin			practical	
Discussions	Identify the	Growth		2 hours	Fourth
Exams	growth	hormones and		theoretic	week
	regulator/gibbere	apical		al	
	llinin GAs and its	dominance		3 hours	
	physiological			practical	
	effects on the				
	plant				
Discussions	Conducting	Growth		2 hours	Fifth
Exams	laboratory	hormones and		theoretic	week
	experiments on	photosynthesis		al	
	the physiological			3 hours	
	effects of			practical	
	gibberellin				
Discussions	Identify the	Growth and		2 hours	Week
Exams	growth regulator	flowering		theoretic	Six
	/ cytoquinine and	hormones		al	
	its physiological			3 hours	
	effects on the			practical	

	plant			
Discussions	Conducting	Growth	2 hours	Week
Exams	laboratory	hormones	theoretic	seven
Litamo	experiments on	transport and	al	001011
	the physiological	distribution of	3 hours	
	effects of	nutrients in the	practical	
	cytokinin	nlant	praotioar	
Discussions	Identify the	The effect of	2 hours	Week
Evame	arowth regulator	drowth	theoretic	eight
LAINS				eigin
		seeus	5 Hours	
			practical	
Diaguagiana	piant		2 h auna	\ <b>A</b> /a a la
Discussions	Conducting	The effect of	2 nours	vveek
Exams	laboratory	growth	theoretic	Nine
	experiments on	regulators on	al	
	the physiological	the roots	3 hours	
	effects of		practical	
	ethylene			
Discussions	Identify the	The impact of	2 hours	Week
Exams	growth regulator	growth	theoretic	Ten
	/ abscisic acid	regulators on	al	
	ABA and its	productivity	3 hours	
	physiological		practical	
	effects on the			
	plant			
Discussions	Conducting	The effect of	2 hours	Week
Exams	laboratory	growth	theoretic	Eleven
	experiments on	regulators on	al	
	the physiological	physiological	3 hours	
	effects of	processes	practical	
	abscisic acid			
	ABA			
Discussions	Identify the	Applications	2 hours	Twelfth
Exams	growth regulator/	and use of	theoretic	week

	[	[		Γ		,
	parasinosteroid	grow	/th		al	
	and its	regulate	ors in		3 hours	
	physiological	the agric	cultural		practical	
	effects on the	fiel	d			
	plant					
Discussions	The use of	Effec	t of		2 hours	Thirteen
Exams	growth regulators	Grov	vth		theoretic	th week
	and their	Regulate	ors on		al	
	applications in	Text	ile		3 hours	
	the agricultural	Agricu	lture		practical	
	field					
Discussions	Laboratory	Abo	ut		2 hours	Fourtee
Exams	Guidelines and	phytohor	mones		theoretic	nth
	Definitional	discov	eries		al	week
	Terminology				3 hours	
					practical	
	Identify the	Types o	f plant			Week
	growth regulator	grow	/th			V
	/ oxins IAA and	regula	itors			ten
	its physiological					
	effects on plants					
10. Course Eva	aluation	I			I	
Distributing	the score out of 1	00 accord	ing to th	ne tasks as	signed to th	ne student
such as da	ily preparation, daily	y, oral, mo	onthly, w	ritten exam	s, reports .	etc
11. Learning a	nd Teaching Resou	rces				
Plant Growth	n Regulators: Hortic	ultural	Requir	ed textbook	s (methodo	logy, if any
Applications a	and Uses – Written	by Dr.			,	
Makki Alv	wan Al-Khafaji - 20	)14				
	-					
			Main r	eferences (s	sources)	
Scientific io	ournals in the	main	Recommended books and references			
specializations	5		(scientific journals, reports)			
				-	. )	

AI-Muthanna	University	e-learning	Electronic References, Websites
website			
https://agr.mu.eo	du.iq/		

1. Course	e Title:				
		Molecular here	dity		
2. Course	e Code				
		0024406	5		
3. Semes	ster / Year				
		/ SPRING /F	ourth		
4. Date o	f preparation of this d	escription :			
		2023-202	24		
5. Numbe	er of Credit Hours (Tot	tal) / Number of U	nits (Total)		
Numbe	er of credit hours (tota	l) 75 hours			
6. Course	e Administrator Name:	-			
Name: As	ssoc. Prof. Muham	imad Hussein M	Noor Has	san Alsalami	Email
mohammad	d.noor@mu.edu.iq				
7. Cou	irse Objectives				
• Exp	lanation and clarific	ation-			
• Lec	ture method-				
s Stu	dent groups-				
• 314					
• Pra	ctical lessons in lab	oratories			
8. Course	e Structure				
Evaluation	Practical	Unit or subject name	Required	Hours	The
method			Learning		week
Discussions		Identify cells and their	Outcomes	2 hours theoretical	First
Exams		types		3 hours practical	week
Discussions		Familiarity with the		2 hours theoretical	Second

Exams		methods of cell	3 hours practical	week
		division		
Discussions		What is genetic	2 hours theoretical	Third
Exams		material?	3 hours practical	week
Discussions		How constinue to starial	2 hours theoretical	Fourth
Exams		is replicated	3 hours practical	week
Discussions		Chemical	2 hours theoretical	Fifth
Exams		constituents of	3 hours practical	week
		genetic material		
Discussions		Identify cells and their	2 hours theoretical	Week
Exams		types	3 hours practical	Six
Discussions			2 hours theoretical	Week
Exams	First month exam	First month exam	3 hours practical	seven
			сс р	
Discussions	Chromosome	Familiarity with the	2 hours theoretical	Week
Exams	chemical structure	chemical structure of	3 hours practical	eight
	onennour structure	the chromosome		
Discussions		Inference of gene	2 hours theoretical	Week
Exams	Gene expression	expression and	3 hours practical	Nine
	and protein synthesis	protein synthesis		
Discussions	Regulation	How to regulate gene	2 hours theoretical	Week
Exams	of gene expression in	expression in	3 hours practical	Ten
	primitive and	primitive		
	eukaryotic	and eukaryotic		
Discussions	Extrachromosomal genetic	To identify the	2 hours theoretical	Week
Exams	material	genetic material	3 hours practical	Eleven
		outside the		
		chromosomes		
Discussions	DNA	Identifying DNA in	2 hours theoretical	Twelfth
Exams	in mitochondrie	Mitochondria	3 hours practical	week
Discussions	Condemplant and	How to get	2 hours theoretical	Thirtee
Exams	crylorplast and	chrolorplast and	3 hours practical	nth
	cytopiasmic inneritance	cytoplasmic		week
		genetics		
Discussions			2 hours theoretical	Fourtee
Exams	Second month exam	Second month exam	3 hours practical	nth
				week
		Second month exam		Week
				v
				ten
Course Ev	aluation			

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports .... etc

. Learning and Teaching Resources			
Fundamentals of Genetic Engineering	Required textbooks (methodology, if any)		
	Main references (sources)		
Scientific journals in the main	Recommended books and references		
specializations	(scientific journals, reports)		
AI-Muthanna University e-learning	Electronic References, Websites		
website			
https://agr.mu.edu.iq/			

1. Course Title:					
E	Breeding and improving a plant				
2. Course Code					
	0024401				
3. Semester / Year	3. Semester / Year				
	SPRING/Fourth				
4. Date of preparation of the	is description :				
	2023-2024				
5. Number of Credit Hours	(Total) / Number of Units (Total)				
Number of credit hours	(total) 75 hours				
6. Course Administrator Na	ime:				
Name: Assoc. Prof. Mu	hammad Hussein Noor Hassan Alsal	ami Email			
mohammad.noor@mu.edu.id	1				
Course Objectives					
Enable the student to	Course Objectives				
understand and	This course description provides a brief	summary of			
understand plant	understand plant most important characteristics of the course				
breeding and the	The learning outcomes expected of the st	udent to achie			
relationship of this	are proof of whether he has made the mos	st of the availa			
science to the possibility	science to the possibility learning opportunities. It must be linked to the pro-				
of developing crop plants	description.				
through breeding,					
Improvement and					
nypricization.					
Leaching and Learning Strategies					
		Surategy			
2- Lecture method-					

3- Studen	t groups–				
Practical lessons in laboratories					
9. Course Structure					
Evaluation method		Unit or subject name	Required Learning Outcome s	Hours	The week
Discussions Exams		Plant breeding and the purposes of pedagogy		2 hours theoretica I 3 hours practical	First week
Discussions Exams		Insemination and fertilization		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Second week
Discussions Exams		Reproduction in the plant		2 hours theoretica I 3 hours practical	Third week
Discussions Exams		Male infertility and self-incompatibility		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Fourth week
Discussions Exams		Genetic variations and their relationship to plant breeding		<ul><li>2 hours</li><li>theoretica</li><li>I</li><li>3 hours</li><li>practical</li></ul>	Fifth week
Discussions Exams		Important factors in determining the act		2 hours theoretica	Week Six

		of election	1	
			3 hours	
			practical	
Discussions			 2 hours	Week
Exams	First		theoretica	seven
	month	First month exam	1	
	exam		3 hours	
			practical	
Discussions		Estimation of	2 hours	Week
Exams		certain genetic	theoretica	eight
		parameters	1	_
			3 hours	
			practical	
Discussions			 2 hours	Week
Exams		Genetic	theoretica	Nine
		redundancy	I	
			3 hours	
			practical	
Discussions			2 hours	Week
Exams		Hybridization and	theoretica	Ten
		hybrid varieties	I	
			3 hours	
			practical	
Discussions			2 hours	Week
Exams		Breeding mutations	theoretica	Eleven
			I	
			3 hours	
			practical	
Discussions		Chromosomal	 2 hours	Twelfth
Exams		replication	theoretica	week
		and its relationship	I	
		to plant breeding	3 hours	
			practical	
Discussions		Self-pollinating	2 hours	Thirteent
Exams		plant breeding	theoretica	h week

		methods			1	
					3 hours	
					practical	
Discussions		Methods of			2 hours	Fourteen
Exams		breeding			theoretica	th week
		mixed-pollinated			I	
		plants			3 hours	
					practical	
		Second month				Week
		exam				V
						ten
10. Course Eva	10. Course Evaluation					
Distributing the score out of $100$ according to the tasks assigned to the student						
such as daily preparation, daily, oral, monthly, written exams, reports etc						
11. Learning and Teaching Resources						
Breeding and improvement of field crops			Required textbooks (methodology, if any)			
			Main references (sources)			
Scientific jou	urnals in	the main	Recom	mended be	ooks and	references
specializations		(scientific journals, reports)				
Al-Muthanna	University	e-learning	Electro	nic Referen	ces, Website	es
website						
https://agr.mu.e	https://agr.mu.edu.iq/					