

Ministry of Higher Education and Scientific Research University of Kirkuk / College of Agriculture

Department of Soil Sciences and Water Resources



Academic Program and Course Description Guide Department of Soil Sciences and Water Resources University of Kirkuk / College of Agriculture 2023 / 2024

Academic Program Description Form

University Name: Kirkuk Faculty/Institute: Agriculture Scientific Department: Soil Science and Water Resources Academic or Professional Program Name: Bachelors in Soil Science and Water Resources Final Certificate Name: Bachelor's degree in Soil Science and Water Resources Academic System: Semester Description Preparation Date: 3 /4/ 2024 File Completion Date: 3 /4/ 2024

Signature: SAlah 2024

Head of Department Name: Assis Prof.Dr.Salah Jasim Amin Date: 3 /4/ 2024



Signature: AM Assistant Dean for Scientific Affairs and Postgraduate Studies Prof. Dr. Ammar Qahtan Shannon Date: 3 /4/ 2024

The file is checked by:

Department of Quality Assurance and University Performance Director of the Quality Assurance and University Performance Departments Ahmed Esam Dawood

Date: 4/4/2024 Br. Ahmed Isam Signature: Atr Br. Ahmed Isam

Approval of the Dean Or. O samah <u>i</u>. Ahmed

1. Program Vision

- 1.Providing an academic environment to help the student learn and develop his culture, and providing the opportunity to develop the faculty's capabilities to fully perform their academic mission.
- 2. Excellence in education methods to provide society with qualified cadres to develop healthy food production from available natural resources through sustainable agricultural development while preserving the environment and community service, and capable of implementing agricultural policies and competing locally and globally.
- 3. Activating scientific research for sustainable, high-production agriculture, capable of international competition.
- 4. The department's participation in agricultural and scientific conferences and in project evaluation
- 5. Making scientific research results available and providing advice to investors and decision makers.
- 6. Strengthening guidance channels, community service and development of rural communities.

2. Program Mission

The department's program contributes to achieving the college's mission, which seeks to spread and apply knowledge to efficiently manage available natural resources in order to provide food for the people, preserve the environment, and achieve sustainable agricultural development. The department is also interested in preparing qualified cadres to develop agricultural production and serve the community by conducting applied research to find solutions to community problems in the agricultural field in general and the field of soil and water resources in particular, as well as participating in implementing extension programs to transfer knowledge and the results of applied research and participating with other departments locally, regionally and internationally. To develop the process of education and scientific research.

3. Program Objectives

1. Graduating qualified scientific personnel who hold a bachelor's degree in agricultural

sciences within the specialty of soil sciences and water resources, as well as advanced scientific personnel who hold master's degrees.

- 2. Develop programs for community service by holding seminars, training and guidance courses in the field of soil and water resources, in cooperation with other state departments related to various agricultural sciences.
- 3. Contributing to solving the problems that the agricultural sector suffers from, especially within the soil and water axes, through preparing research projects implemented by the scientific staff in the department in particular, or through research projects for postgraduate students.
- 4. Preparing continuing education programs to follow up on graduates of the Department of Soil and Water Resources Sciences and develop their technical and scientific skills by holding development courses on the latest developments in science in the department's specialty and those wishing to develop their skills in this specialty.
- 5. Work on developing the department's curricula in cooperation with corresponding departments in Iraq.
- 6. Adopting educational courses that focus on the student's practical skills to prepare him for the labor market and continue self-learning
- 7. Conducting applied research in the fields of soil fertility, fertilization, irrigation system technologies, soil surveying and classification, and its microbiology.
- 8. Maximizing the return from the soil and water unit, with a focus on rationalizing water use and preventing soil and water pollution.
- 9. Investing in information technology to develop education, research and community service.
- 10. Implementing a quality program to improve performance rates in education, research, and community service.

4. **Program Accreditation**

The program seeks to obtain program accreditation.

5. Other external influences

Scientific seminars and workshops, coordination with relevant agricultural departments as well as private sector participation.

6. Program Structure									
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*					
Institution Requirements	12	15	9.87	Basic					
College Requirements	20	51	33.55	Basic					
Department Requirements	31	86	56.58	Basic					
Summer Training	1								
Other									

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

7. Program De	scription			
Year/Level	Course Code	Course Name	Credit	Hours
	ANCH111	Analytical Chemistry	theoretical	practica
	GEPH112	General Physics	2	3
	PRFI113	Principles Of Field Crops	2	3
First year/first	PRAN114	Principles of Animal Production	2	3
semester	MATH115	Mathematics/ 1	2	-
	HURI116	Human rights	2	_
	ENDR117	Engineering Drawing	-	3
	COAP118	Computer Applications /1	-	3
	ARLA119	Arabic Language	2	_
	ORCH121	Organic Chemistry	2	3
	PRGE122	Principles Of Geology	2	3
	FRPR123	Fruit Production	1	3
First year/second	AGEC124	Principles Of Agricultural Economics	2	-
semester	MATH125	Mathematics /2	2	-
	COAP126	Computer Applications /2	-	3
	LASU127	Land Survey	1	3
	ENLA128	English Language /1	1	-
Second year/first	BICH211	Bio-Chemistry	2	3
Second year/first	PRSO212	Principles Of Soil Science	2	3

semester	PRST213	Principles Of Statistics	2	3
	PRMI214	Principles Of Microbiology	2	3
	SOEC215	Soil Ecology And Meteorology	2	3
	AGEX216	Principles of Agricultural Extension	2	-
	COAP217	Computer Applications/ 3	-	1
	ENLA218	English Language /2	1	-
	CRBA219	Crimes of Baath Regime in Iraq	2	_
	SOPL221	Soil, Plant And Water Analysis	2	3
	PRPL222	Principles Of Plant Protection	2	3
Second year/second	FAMA223	Farm Machinery And Equipments	2	3
semester	VEPR224	Vegetable Production	1	3
	PLPH225	Plant Physiology	2	3
	LALE226	Land Leveling	2	3
	FRED227	Freedom and democracy	1	1
	COAP228	Computer Applications/ 4	1	-
	SOPH311	Soil Physics	2	3
	SOOR312	Soil Organic matter	2	3
	SOFE313	Soil Fertility	2	3
Third year/first	IRRI314	Irrigation	2	3
semester	SOCH315	Soil Chemistry	2	3
	SOWA316	Soil And Water Pollution	2	3
	EXDE317	Experimental Designs and Analysis	2	3
	RESE321	Remote sensing	2	3
	SOSA322	Soil Salinity	2	3
	SOMO323	Soil Morphology	2	3
Third year/second	DRAI324	Drainage	2	-
semester	SOMI325	Soil Mineralogy	2	3
	ECNA326	Economics Of Natural Resources	3	-
	ENLA327	English Language /3	1	-
	SOSU411	Soil Survey And Classification	2	3
	SOCO412	Soil & Water Conservation	2	3
	SOMI413	Soil Microbiology	2	3
Fourth year/first	SOPL414	Soil-Water-Plant Relationships	2	3
semester	HYWA415	Hydrology & Water Resources	2	3
	IRTE416	Irrigation Technology Systems	2	3
	REPR417	Research Project	-	3
Fourth year/second	SOMA421	Soil Management And Land	2	3

semester		Use		
	DESE422	Desertification	2	-
	PLNU423	Plant Nutrition	2	3
	FETE424	Fertilizers Technology	2	3
	LARE425	Land Reclamation	2	3
	ENLA426	English Language /4	1	-
	SEMI427	Seminar	1	-
	REPR428	Research Project	-	3

8. Expected learning outcomes of the program

Knowledge

- 1. Knowledge of theories related to soil science and water resources
- 2. Know and understand methods of surveying, classifying and managing soil and water resources
- 3. Knowledge of soil and water problems, how to conserve soil and water, and

reclaim land

4. Knowledge of modern irrigation system management technologies

Skills

- 1. Providing the student with the skills of soil surveying, classification, and management
- 2. Providing the student with the skills of diagnosing soil and water problems
- 3. Providing the student with soil conservation and land reclamation skills
- **4.** Providing the student with the skills of installing and managing modern irrigation systems technologies
- 5. Providing the student with the skills of using laboratory equipment, examining soil and water samples, and estimating elements

Ethics

- 1. Developing students' sense of responsibility and psychological preparation to bear the burdens placed on their shoulders.
- 2. Developing students' ability to work collectively as effective teams that produce distinctive results.
- **3.** Cultivating the spirit of creativity among students and ensuring that they find innovative solutions to various problems.

Developing the values of keenness and perseverance in completing work to achieve satisfactory results.

9. Teaching and Learning Strategies

- 1. Use the method of delivering information through lecture using the whiteboard, data display device, interactive lecture, and displaying educational video clips that provide the opportunity to watch field and laboratory operations.
- 2. Asking students to submit reports on specific topics related to the academic subject

in order to expand the student's cognitive ability and train him on means of accessing information to keep his information up-to-date in the future.

3. Training students and encouraging them to use logical discussion, express opinions, and inquire.

4. Learning through practical application in laboratories and applied field practices.

10. Evaluation methods

1– Daily exams. 2– Reports. 3– Monthly exams. 4– Practical exams. 5– The final exam, both theoretical and practical. 6– Summer training in government departments and submitting a report

11. Faculty						
Faculty Members						
Academic Rank	Specializa	Require	ecial ments/Skil oplicable)	Number of the teaching staff		
	General Special				Staff	Lecturer
Professor	Soil Science and Water Resources	Soil survey and management			1	
Professor	Agricultural machines	Design of agricultural machinery			1	
Assistant Professor	geology	geophysics			1	
Assistant Professor	Agricultural Extension	environmenta I Extension			1	
Assistant Professor	Soil Science and Water Resources	Soil Physics			1	
lecturer	Biological	Environment			1	
		8				

					<u> </u>
lecturer	Biological	microbiology		1	
lecturer	geology	Sedimentary rock		1	
lecturer	Mechanical Engineering cs	Applied Mechani		1	
lecturer	law	Criminal law		1	
Assistant lecturer	Soil Science and Water Resources	Soil Physics		1	
Assistant lecturer	Soil and water resources sciences,	soil surveying and classification		1	
Assistant lecturer	Physics	Laser physics		1	
Assistant lecturer	geology	geology		1	
Assistant lecturer	Horticulture and landscaping	Medicinal and aromatic plants		1	
Assistant lecturer	Arabic language	Arabic language		1	

Professional Development

Mentoring new faculty members

- 1. Holding periodic meetings with new faculty in order to guide them in everything related to the progress of the educational process in the department
- 2. Holding seminars and workshops in order to introduce them to the tasks, duties and work of teaching, in addition to introducing them to the University Service Law, the

State Employees Discipline Law, and the controls and instructions for academic promotions.

3. Directing and urging them to carry out scientific research for the purpose of gaining scientific experience as well as benefiting from it for scientific promotion.

Professional development of faculty members

- 1. Support and encourage the participation of faculty members in local and international research projects to support expertise and capabilities.
- 2. Support and encourage the participation of faculty members in local and international conferences
- 3. Supporting researchers' sponsorship activities, supporting the motivation of faculty members, and developing scientific laboratories
- 4. Support and encourage teachers to engage in development courses held by the university and college to increase knowledge of modern learning methods and keep pace with development.

12. Acceptance Criterion

The department develops a plan to accept students according to several criteria, including the department's absorptive capacity and the number of available teaching staff, as well as the availability of material resources and academic supplies that provide a suitable learning environment for students, noting that admission to the college is generally centralized, and then students are distributed among the scientific departments according to a form. The comparison includes the student's grade point average and interest in the relevant department, and based on it, the student is nominated for admission to the department.

13. The most important sources of information about the program

1. Methodical books available in the Free Education Unit.

2. Source books, master's theses, and doctoral dissertations in the college library as well as the department library.

3. Kirkuk University Journal of Agricultural Sciences, published by the college.

4. The Internet

14. Program Development Plan

- 1. Working to update the department's courses and curricula periodically and in a way that is consistent with the directions of the ministry, the university, and the college, as well as the requirements of the labor market.
- 2. Working to conclude cooperation agreements with the corresponding departments in the local, Arab and foreign universities in order to exchange scientific experiences.
- 3. Concluding joint cooperation agreements with relevant agricultural departments and institutions for the purpose of exchanging experiences and providing students with the opportunity for scientific visits to the centers, research stations and affiliated laboratories within the practical curriculum, as well as implementing the summer training program for students in those departments and institutions, in addition to finding and providing job opportunities for graduates of the department. As well as providing these institutions with the results of the department's scientific research.
- 4. Taking advantage of agricultural offices and companies in the private sector to utilize their capabilities to enhance the learning process for students in the department, as well as creating job opportunities for graduates.
- 5. Modernizing the department's laboratories by equipping them with the latest laboratory equipment necessary for students' practical laboratory applications.
- 6. Working to fill the shortfall in the number of specialized teaching staff in cooperation with the Deanship of the College and the University Presidency.

		Progra	m Skills (Outli	ne										
						Req	uired	l prog	gram 1	Learn	ing o	utcoi	mes		
Year/Level	Course Code Course Name		Basic or		Know	ledge)	Skills				Ethi	cs		
i cui / levei	course coue	course nume	optional	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
	ANCH111	Analytical Chemistry	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	GEPH112	General Physics	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	PRFI113	Principles Of Field Crops	Basic	*	*	*	*	*	*	*	*	*	*	*	*
First year/first	PRAN114	Principles of Animal Production	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	MATH115	Mathematics/ 1	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Semester	HURI116	Human rights	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	ENDR117	Engineering Drawing	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	COAP118	Computer Applications /1	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	ARLA119	Arabic Language	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	ORCH121	Organic Chemistry	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	PRGE122	Principles Of Geology	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	FRPR123	Fruit Production	Basic	*	*	*	*	*	*	*	*	*	*	*	*
First year/second	AGEC124	Principles Of Agricultural Economics	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	MATH125	Mathematics /2	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	COAP126	Computer Applications /2	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	LASU127	Land Survey	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	ENLA128	English Language /1	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Second	BICH211	Bio-Chemistry	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	PRSO212	Principles Of Soil Science	Basic	*	*	*	*	*	*	*	*	*	*	*	*
year/first	PRST213	Principles Of Statistics	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester —	PRMI214	Principles Of Microbiology	Basic	*	*	*	*	*	*	*	*	*	*	*	*

							1	1							
	SOEC215	Soil Ecology And Meteorology	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	AGEX216	Principles of Agricultural Extension	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	COAP217	Computer Applications/ 3	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	ENLA218	English Language /2	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	CRBA219	Crimes of Baath Regime in Iraq	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOPL221	Soil, Plant And Water Analysis	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	PRPL222	Principles Of Plant Protection	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Second	FAMA223	Farm Machinery And Equipments	Basic	*	*	*	*	*	*	*	*	*	*	*	*
year/second	VEPR224	Vegetable Production	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	PLPH225	Plant Physiology	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	LALE226	Land Leveling	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	FRED227	Freedom and democracy	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	COAP228	Computer Applications/ 4	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOPH311	Soil Physics	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOOR312	Soil Organic matter	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Third year/first	SOFE313	Soil Fertility	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	IRRI314	Irrigation	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOCH315	Soil Chemistry	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOWA316	Soil And Water Pollution	Basic	*	*	*	*	*	*	*	*	*	*	*	*

	EXDE317	Experimental Designs and Analysis	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOOR312	Soil Organic matter	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOFE313	Soil Fertility	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	IRRI314	Irrigation	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Third	SOCH315	Soil Chemistry	Basic	*	*	*	*	*	*	*	*	*	*	*	*
year/second semester	SOWA316	Soil And Water Pollution	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	EXDE317	Experimental Designs and Analysis	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	RESE321	Remote sensing	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOSU411	Soil Survey And Classification	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	SOCO412	Soil & Water Conservation	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Fourth	SOMI413	Soil Microbiology	Basic	*	*	*	*	*	*	*	*	*	*	*	*
year/first	SOPL414	Soil-Water-Plant Relationships	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	HYWA415	Hydrology & Water Resources	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	IRTE416	Irrigation Technology Systems	Basic	*	*	*	*	*	*	*	*	*	*	*	*
	REPR417	Research Project	Basic	*	*	*	*	*	*	*	*	*	*	*	*
Fourth	SOMA421	Soil Management And Land Use	Basic	*	*	*	*	*	*	*	*	*	*	*	*
year/second	DESE422	Desertification	Basic	*	*	*	*	*	*	*	*	*	*	*	*
semester	PLNU423	Plant Nutrition	Basic	*	*	*	*	*	*	*	*	*	*	*	*

FETE424	Fertilizers Technology	Basic	*	*	*	*	*	*	*	*	*	*	*	*
LARE425	Land Reclamation	Basic	*	*	*	*	*	*	*	*	*	*	*	*
ENLA426	English Language /4	Basic	*	*	*	*	*	*	*	*	*	*	*	*
SEMI427	Seminar	Basic	*	*	*	*	*	*	*	*	*	*	*	*
REPR428	Research Project	Basic	*	*	*	*	*	*	*	*	*	*	*	*

• Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

		Cou	irse Description Fo	rm						
1. Cours	e N	Jame:								
		An	alytical Chemistry							
2. Cours	se (Code:								
			ANCH111							
3. Seme	ste	r / Year:								
first semester/first year										
4. Description Preparation Date:										
2024-3-28										
5. Available Attendance Forms:										
6. Number of Credit Hours (Total) / Number of Units (Total)										
0. INUIIIC	er		,	nits						
7 Cour			(mention all, if more							
		ssistant prof :Nahla k			0)					
		p.nahlaasaad@uokirł								
		Dbjectives	•							
Course Object	ives	;								
Teachi	ng		eption (acceptance/r ability to respond. Val	• •	ment of the					
9. Teach	ing	and Learning Strategi	es							
Strategy			lent with a brief know mistry and their dired	e						
10. Course	Str	ucture								
Week Hour	s	Required Learning	Unit or subject name	Learning	Evaluation					

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation
		Outcomes		method	method
1	2	Definition of the student on the science of analytical chemistry Definition of the importance of quantitative chemistry and expression of concentrations with	the science of analytical chemistry Definition of the importance of quantitative chemistry and expression of concentrations with	Explanation, presentation of the model and lecture and interactive discussion	Oral and written tests, Daily and monthly reports and scientific reports
2	2	Student definition. LawsPM, W/W%, V/V%With Mitigation LawsFor Worship With	Laws PM, W/W%, V/V% With Mitigation Laws For Worship With Matters	Explanation, presentation of the model and lecture and interactive discussion	Oral and written tests, Daily and monthly reports and

		Matters			scientific
					reports
					Oral and
		Student definition of Ve	Vo and the method of	Explanation,	written tests,
_	_		Ka and the method of	presentation of the	Daily and
3	2	and the method of	estimating the curves of	model and lecture	monthly
		estimating the curves of	correction with matters	and interactive	reports and
		correction with matters		discussion	scientific
		confection with matters			reports
4	2				Oral and
•	2	Student's definition of	ion balance, hydrolysis	Explanation,	written tests,
		ion balance, hydrolysis		presentation of the	Daily and
		theories and pH for	theories and pH for	model and lecture	monthly
		acids, bases and salts of	acids, bases and salts of	and interactive	reports and
			both types	discussion	scientific
		both types	5 I	discussion	reports
5	2	Define the student on the			<u>^</u>
5	2	Define the student on the	the methods of		Oral and
		methods of measuring	measuring pH and the	Explanation,	written tests,
		pH and the Ph device		presentation of the	Daily and
		with detailed and	Ph device with detailed	model and lecture	monthly
			and structured solutions.	and interactive	reports and
		structured solutions.	Prepare it. With	discussion	scientific
		Prepare it. With	-		reports
6	2		First exam from		
			curriculum start to		
			solutions. perforati		
7	0		solutions: periorati		Oral and
7	2	Student definition of			Oral and
		sedimentary debris and	sedimentary debris and	Explanation,	written tests,
		•	touching on the Moore,	presentation of the	Daily and
		touching on the Moore,	Fulhard and Fagen	model and lecture	monthly
		Fulhard and Fagen	method	and interactive	reports and
		method	memou	discussion	scientific
					reports
8	2	Student definition of	weight englysis		Oral and
		weight analysis,	weight analysis,	Explanation,	written tests,
		oxidation swabs,	oxidation swabs,	presentation of the	Daily and
		,	reductions, oxidation	model and lecture	monthly
		reductions, oxidation	evidence and reductions	and interactive	reports and
		evidence and reductions	with issues of	discussion	scientific
		with issues of)	with 155005 01		reports
9	2	The student's definition			Oral and
,	2		automated analysis and	Explanation,	written tests,
		of automated analysis	identification of	presentation of the	Daily and
		and identification of	Lambert Law -per and	model and lecture	monthly
		Lambert Law -per and	-	and interactive	reports and
		spectrometer device	spectrometer device	discussion	scientific
		with matters.	with matters.	01500551011	
10		with matters.			reports
10	2				Oral and
				Explanation,	written tests,
		Student Definition of		presentation of the	Daily and
		Bever Solutions	Bever Solutions	model and lecture	monthly
				and interactive	reports and
				discussion	scientific
					reports
11	2			Explanation,	Oral and
		Student Definition of	Waight Analysis	presentation of the	written tests,
		Weight Analysis	Weight Analysis	model and lecture	Daily and
	1			and interactive	monthly

						discussion	reports and scientific	
12	2	Identification Way Moore, Fulhard and Fagen	Way and Fa	Moore, agen	Fulhard	Explanation, presentation of the model and lecture and interactive discussion	reports Oral and written tests, Daily and monthly reports and scientific reports	
13	2	The student's definition of explaining evidence of acid and rules with multiple issues resolved on all topics above	acid multip	and rul	dence of les with resolved ove	Explanation, presentation of the model and lecture and interactive discussion	Oral and written tests, Daily and monthly reports and scientific reports	
14	2	Define the student on the methods of measuring pH and the Ph device with detailed explanation of the organized solutions. and the way they are prepared. With	Ph de explan organi the	vice with ation zed solut	and the detailed of the ions. and hey are	Explanation, presentation of the model and lecture and interactive discussion	Oral and written tests, Daily and monthly reports and scientific reports	
15		exam						
11.	Course	Evaluation						
 1- Theoretical tests ^Y - Practical tests ^r - Reports and studies Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc. 								
12.	Learning	and Teaching Resour	ces					
Requi	red textboo	ks (curricular books, if any)					
Recon	references nmended tific journ		ences	Analytic	cal Chemis	try		
		ences, Websites		https://	/www.for	a.com/courses/	%D8%	

	Course Description Form				
1. Cours	e Name:				
	General Physics				
2. Cours	e Code:				
	GEPH112				
3. Seme	ster / Year:				
	first semester/first year				
4. Descr	iption Preparation Date:				
	31/3/2024				
5. Availa	able Attendance Forms:				
6 Numb	Classroom attendant er of Credit Hours (Total) / Number of Units (Total)				
0. INUIIIO	5				
7. Cours	se administrator's name (mention all, if more than one name)				
Name:	Susan Ibrahim Hassan				
	susanih@uokirkuk.edu.iq				
	e Objectives				
Course	• Provide students with a basic understanding of physical concepts and their applications				
Objectives	 Developing scientific thinking skills and creative solutions to problems 				
	• Students are encouraged to participate in practical experiments and practical activities				
	• Enhance their understanding of the concepts and applications of physics in daily life a				
	different fields				
9. Teach	ing and Learning Strategies				
Strategy	1. Before starting to memorize information or solve problems, it is best to understand the				
	basic concepts in physics.				
	2. Search for various educational resources such as textbooks, educational videos,				
	interactive programs on the Internet, and educational applications.				
	3. Solve a variety of problems to apply the concepts the student learns to improve his				
	physical thinking skills.				
	4. Conduct practical experiments. Different experiments can help clarify concepts and				
	understand how to apply them in the real world.				
	5. Encouraging discussion of concepts and solving problems collectively by asking studer				
	controversial questions.				
	6. Daily exams help to review the material regularly to consolidate the concepts in memory				

Neek	Hours	Required Learning	Unit or subject name	Learning	Evaluation
		Outcomes		method	method
1	2	Describe the properties of each state of matter and explain its behavior. identify the factors that influence the transformation of a substance from one state to another, such as temperature and pressure.	Matter States, General Properties of Matter, Mechanical Properties of Matter	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
2	2	Understand the exact nature of matter and its behavior, and enable them to apply this knowledge in understanding natural phenomena and analyzing chemical reactions and physical transformations.	kinetic theory, molecular dimensions and intervals, Brownian motion	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
3	2	Understand the interactions and properties of substances at the molecular level, enabling them to interpret physical and chemical phenomena more deeply and apply this knowledge in areas such as engineering, chemistry and materials science.	velocity, molecular forces, intermolecular collision, thermal properties of matter	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
4	2	are relationships between pressure and gas volume in different conditions, as well as the effects of compressibility and elasticity on the properties of materials in many fields.	Boyle's Law, Compressibility and Elasticity/Exam	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
5	2	Understand the relationship between force and motion and apply it to solving physical problems in one dimension, in addition to understanding the phenomenon of free fall and the effect of gravity on objects.	Laws of force and motion, laws of motion in one dimension, free fall of bodies	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
6	2	Understand the	About Newton's laws of	lecture and	Student discussion,

		physical foundations of motion and gravity and	motion: the first law of motion, the second law of	discussion and	daily exam, solving some examples on
		apply them to solving scientific problems and explanations in various fields.	motion, Newton's law of universal gravitation	Watching some scientific videos	the board
7	2	Understand the phenomenon of hydrogen synergy in water, the structure and physical and chemical properties of water molecules and their vital role as a solvent in many biological and chemical processes.	Water: molecular structure, hydrogen bonds, and solvent/test properties	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
8	2	The concept of surface tension as a force accumulated on the surface of a liquid. Identify the factors of surface tension such as surface tension and its effect on fluid behavior. Ability to interpret practical applications of surface tension,	tension, contact angle, capillary property	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
9	2	The concept of diffusion as a transition phenomenon from the highest concentration to the bottom. Osmotic phenomena as a physical phenomenon describe the transport of substances through a semipermeable membrane.	Diffusion, osmotic phenomenon	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
10	2	understand the physical behavior of liquids and the effect of viscosity on flow,	Viscosity, Newton's law of viscosity	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
11	2	Understand fluid behavior and pressure in fluids and the effect of various factors on them.	Fluid Flow, Fluid Pressure, Poisel's Law	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
12	2	Understand the mathematical steps and processes that lead to Stoke's law and how to apply them.	Stoke's law, its derivation and applications	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board

13	2	The ability to use volumetric and gravimetric relationships to solve problems related to gravity, mass and volume. Understand porosity as a measure of empty voids within a given material.	Volumetric and Weight Relationships, Body Density, Porosity, Surface Area and Specificity	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
14	2	devices are understood as tools used to convert light into electrical signals that can be understood, analyzed, and interpreted by harmful X-ray generation and applications.	Optical Equipment, X-ray	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board
15	2	exam	Exam	lecture and discussion and Watching some scientific videos	Student discussion, daily exam, solving some examples on the board

Reports (5%) - Daily exam, participation and attendance (5%) - Monthly exam for the theoretical part (20%) - Monthly exam for the practical part (10%) - Final exam (60%: theoretical part 40% + practical part (20%).

12. Learning and Teaching Resources

Required textbooks (curricular books, if any	Practical Physics, written by I. Armitage, translated
	by Dr. Edmond Tobia George, published by the
	College of Science, University of Mosul.
Main references (sources)	Physics for Scientists and Engineers" Serway and
	Jewett
Recommended books and references	University Physics" Young and Freedman
(scientific journals, reports)	
Electronic References, Websites	KhanAcademy (https://www.khanacademy.org/)
	Main references (sources) Recommended books and references (scientific journals, reports)

			Course Description Form					
1.	Course N	Name:						
Principles of Field crops								
2. Co	ourse Co	de:						
			PRFI113					
3. Set	mester /	Year:						
			first semester/ fourth year					
4. De	escription	n Preparation	n Date:					
			1/4/2024					
5. Av	v ailable A	Attendance F	orms:					
			Attendance at lecture is manda	tory				
6. Nu	imber of	Credit Hou	rs (Total) / Number of Units (Tot	al)				
	5 H	lours (2 hours	theory, 3 hours practical per wee	k) - Number of	units (3)			
7. Co	ourse adı	ninistrator's	name (mention all, if more than	one name)				
Na	me: Dr.a	abbas Abdulla	taha \ Email: abbasabdulla@uo	kirkuk.edu.iq				
8. Co	ourse Ob	jectives						
		V	specialized in applied agricultura	l sciences, esp	ecially in the			
			who can create job opportunitie	-	•			
		-	the task without waiting for job of	-	-			
	-	e institutions.	C J	11	1			
9. Te	aching a	nd Learning	Strategies					
			nd use modern presentation metho	ods				
			1					
	U		by asking them questions					
	ning stud		by asking them questions ork (writing scientific reports)					
-	ning stud o urse St i	lent to homew	ork (writing scientific reports)					
-	—	ent to homew ructure		. .				
10. Č	—	ent to homew ructure Required	ork (writing scientific reports)	Learning				
10. Č	ourse Sti	ent to homew ructure		Learning method	Evaluation method			
10. Če Week	Hours	ent to homew ructure Required Learning Outcomes	Unit or subject name	method	methodDaily			
10. Č	ourse Sti	ent to homew ructure Required Learning	ork (writing scientific reports)	Ŭ	methodDailyattendance			
10. Če Week	Hourse Sti Hours	ent to homew ructure Required Learning Outcomes	Unit or subject name Learn about the basics of field crop science	method Lecture	methodDailyattendanceand exam			
10. Čo Week	Hours	ent to homew ructure Required Learning Outcomes Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops	method Lecture Discussion Lecture	methodDailyattendanceand examDaily			
10. Če Week	Hourse Sti Hours	ent to homew ructure Required Learning Outcomes	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate	method Lecture Discussion	methodDailyattendanceand exam			
10. Čo Week 1	Hourse Sti Hours	ent to homew ructure Required Learning Outcomes Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops	method Lecture Discussion Lecture	methodDailyattendanceand examDailyattendance			
10. Čo Week 1	Hourse Str Hours 5 5	ent to homew ructure Required Learning Outcomes Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the growth of field crops	methodLectureDiscussionLectureDiscussion	methodDailyattendanceand examDailyattendanceand exam			
10. Čo Week 1 2	Ourse StiHours555	ent to homew ructure Required Learning Outcomes Cognitive Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the	methodLectureDiscussionLectureDiscussionLectureDiscussion	methodDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand exam			
10. Co Week 1 2 3	Hourse Str Hours 5 5	ent to homew ructure Required Learning Outcomes Cognitive Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the growth of field crops -Heat factor	methodLectureDiscussionLectureDiscussionLectureDiscussion	methodDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDaily			
10. Čo Week 1 2	Ourse StiHours555	ent to homew ructure Required Learning Outcomes Cognitive Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the growth of field crops	methodLectureDiscussionLectureDiscussionLectureDiscussion	methodDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendance			
10. Co Week 1 2 3	Hourse StiHours5555	ent to homew ructure Required Learning Outcomes Cognitive Cognitive	Ork (writing scientific reports) Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the growth of field crops -Heat factor Soil service operations	methodLectureDiscussionLectureDiscussionLectureDiscussionVisit thefields	methodDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand exam			
10. Co Week 1 2 3	Ourse StiHours555	ent to homew ructure Required Learning Outcomes Cognitive Cognitive	Unit or subject name Learn about the basics of field crop science *Dividing field crops *Advantages of the soil and climate of Iraq Environmental factors affecting the growth of field crops -Heat factor	methodLectureDiscussionLectureDiscussionLectureDiscussionVisit the	methodDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendanceand examDailyattendance			

	earning		ing Resources cular books, if an	Principles of field of	crops / Dr. Majeed Ahmed Al-Younes	Mohsen Al-Ansa , Dr. Ghanem
	40		20	tests 5	15	20
Final	theoretic	al exam	Final practical test	Daily theoretical	Practical semester tests	Theoretical semester tests
11.C	ourse Ev	valuation			1	
15	5	Cognitiv	e Harvesting, sto plants	oring and drying	Lecture Discussion	Daily attendance and exam
14	5	Cognitiv	e Processes of co and storing cro	ollecting, purifying op products	Lecture Discussion	Daily attendance and exam
13	5	Cognitiv	e Tools used to opests	control agricultural	Lecture Discussion	Daily attendance and exam
12	5	Cognitiv	e Agricultural	pests that affect field crops	Lecture Discussion	Daily attendance and exam
11	5	Cognitive	Plant seeds and them	d factors affecting	Lecture Discussion	Daily attendance and exam
10	5	Cognitiv	e Life factors an production	d their impact on cro	pp Lecture Discussion	Daily attendance and exam
9	5	Cognitiv	e Crop service o	perations	Visit the fields	Daily attendance and exam
8	5	Cognitiv	e Weeds and wa	ys to combat them	Lecture Discussion	Daily attendance and exam
7	5	Cognitiv	e Light and its regrowth	elationship to crop	Lecture Discussion	Daily attendance and exam
6	5	Cognitiv	e Water and 1	and relationships of plants	Lecture Discussion	Daily attendance and exam

13. Cou	rse Name:
	Principles of Animal Production
14. Cou	rse Code:
	PRAN114
15. Sem	nester / Year:
	first semester/first year
16. Des	cription Preparation Date:
	29/3/2024
17.Available	Attendance Forms:
	mandatory
18.Number of	f Credit Hours (Total) / Number of Units (Total)
10 000	5Hours / 3 Unit
	urse administrator's name (mention all, if more than one name)
	phammed Madhi Zinalabidin hmetmadhi@uokirkuk.edu.iq
	^
20. Cou	rse Objectives
	• The student gets to know the basic principles of animal production through a brief knowledge of:
Course Objectives	• The course aims to teach the student how to care for farm animals as well as carry out field operations
	• Introducing the student to numbering animals, making animal records, and providing fodder
	records, and providing fouder
	caring for newborn animals
21. Tea	ching and Learning Strategies
Strategy	 Preparing a student with a brief knowledge of the basic principles of animal production through a brief knowledge of: The economic importance of wealth as well as the identification of products, eggs and breeding Sheep, cattle and buffalo.

22. Cour	se Struct	ture			
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	2	Recognize the	Economic	Lecture,	Oral and written
		economic	importance	demonstrations	tests, daily and
		importance	Livestock and	and interactive	monthly practical
		Livestock and their	their	discussion	tests, and
		relationship	relationship With economic		scientific reports
		With economic	integration		
		integration	And the future		
		And the future	potential		
		potential	for expanding		
		for expanding	livestock		
		livestock	production in		
		production in	this wealth		
2	2	this wealth Identify	Agricultural		
2	2	the location of	animals		
		agricultural anima			
		(livestock)	in the animal		
		in the	kingdom		
		animal kingdom			
3	2	Identifying cows	Cows and buffalo		
		and buffalo -	economic		
		economic	importance -		
		importance - international,	international, Arab and		
		Arab and local	local species		
		species			
4	2	Learn about the	Management and		
		management and	•		
		care of dairy	cows, beef cows		
		cows, beef cows	and dual-		
		and dual-	purpose cows		
5	2	purpose cows Exam	Exam		
6	2	Getting to know	Economic		
		the buffalo:	importance –		

f						
			economic	origin of the		
			importance –	buffalo –		
			origin of the	istribution in the		
			buffalo –	world –		
			istribution in the	production		
			world –	-		
			production			
	7	2	Identifying sheep	Sheep and goats -		
			and goats –	methods of		
			methods of	classifying them		
			classifying them	and some		
			and some	international		
			international	types		
			types			
	8	2	Identifying local	local species		
			species (sheep an	(sheep and goats)		
			goats) and	and establishing		
			establishing a	a sheep herd		
			sheep herd			
	9	2	Identifying	Poultry and its		
			poultry and its	economic		
			economic	importance - and		
			importance - and	-		
			the origins from	which it was		
			which it was	bred - and		
			bred - and	classifying		
			classifying	poultry in the		
			poultry in the	world		
			world			
	10	2	Exam	Exam		
	11	2	Learn about egg	Egg production		
			production and	and meat		
			meat production	production		
	12	2	Learn about	Poultry		
			poultry	management and		
			management and			
			care - nutrition -	fodder –		
			fodder –	physiology,		
			physiology,	reproduction		
			reproduction	and artificial		
			and artificial	insemination		
			insemination			
				27		

			I				1	
13	2	Identifying	Ferti	lization,				
		fertilization,		nancy and				
		pregnancy and	birth	in cows				
		birth in cows						
14	2	Learn about field		operations				
		operations in		iry and beef				
		dairy and beef	сом	v fields				
		cow fields						
15	2	dentify		tics of farm				
		improvement	anim					
		Genetics of farm		el horses				
		animals-		in - types -				
		Camel horses	Educ					
		(origin - types -	met	hods)				
		Education						
		methods)						
23. C	ourse Ev	aluation						
Distribut	ing the s	core out of 100 accor	ding to	the tasks as	signed to the	e stu	dent such as da	aily
		oral, monthly, or writte						2
24. Le	earning a	nd Teaching Resource	ces					
Required	textbooks	(curricular books, if any))					
Main refe	rences (sc	ources)						
	``	, oks and references (sc	ientific	Princi	iples of Ani	mal	Production" w	ritt
				by:	-F-20 01 111			,
journals, ı	epons)			5	uhammad .	Ali M	akki	
Electronic	Referenc	es, Websites		21111				

	Course Description I of m						
1. Cours	se Name:						
	Mathematics 1						
2. Cours	2. Course Code:						
	MATH115						
3. Seme	ster / Year:						
	first semester/first year						
4. Descr	ription Preparation Date:						
	31/3/2024						
5. Availa	able Attendance Forms:						
	Classroom attendant						
6. Numb	ber of Credit Hours (Total) / Number of Units (Total) 5						
7. Cours	se administrator's name (mention all, if more than one name)						
Name:	Susan Ibrahim Hassan						
	susanih@uokirkuk.edu.iq						
8. Cours	e Objectives						
Course	• Acquire the necessary knowledge of the physical object and understand the meanings a						
Objectives	whys of each mathematical concept.						
	• Apply the steps to solve the mathematical problem by analyzing the problem and						
	developing a solution plan.						
	• Helping the student learn more about new sciences in the learning environment.						
	• It helps develop deductive thinking, reasoning and contemplation skills.						
9. Teach	ning and Learning Strategies						
Strategy	• Encourage students to participate in the lesson by solving problems and interacting wit						
	the materials actively.						
	• Providing opportunities for students to apply mathematical concepts in real-life context						
	• Creating inspiring and intriguing mathematical challenges to motivate students and						
	encourage them to develop their mathematical skills.						
	• Encourage students to work together in groups to solve mathematical problems and						
	discuss ideas.						
	• Provide immediate and constructive feedback to students on their performance						
	understanding of the material.						

Veek	Hours	Required Learning	Unit or subject name	Learning	Evaluation
		Outcomes		method	method
1	2	Understand the basic concepts of real numbers and intervals including natural numbers, integers, decimals, and rational numbers.	Real numbers and intervals	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
2	2	Ability to apply mathematical concepts in solving a variety of problems related to linear and quadratic inequalities	Linear and quadratic inequalities	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
3	2	Ability to apply mathematical concepts in solving a variety of problems related to absolute and fractional inequalities	Absolute and Fractional Inequalities	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
4	2	An ability to accurately draw simple functions and understand the relationship between the equation and form of a function.	Drawing simple functions, incrementing and decreasing functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
5	2	Understand mathematical patterns related to even, odd, and symmetrical functions, such as symmetry and symmetry.	Even and odd and conflicting functions, some common functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
6	2	An ability to apply trigonometric functions in solving practical and realistic problems.	Trigonometric functions, laws of trigonometric functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
7	2	exam			
8	2	Develop the ability to analyze geometrically drawn functions, determine their domains and extent, and understand how value changes affect the shape of a graph.	Domain and range of functions drawn (geometrically)	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
9	2	Learn how to determine the range of variability of a function and the set of values it takes.	Domain and range of functions mathematically	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.

10	2	Understand the basics of the ends of functions and apply it effectively in solving mathematical problems.	Find the ends of the functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
11	2	Learn the concept of continuity of functions and know the conditions necessary for a function to be continuous at a certain point or in a specific set of points.	Continuity of functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
12	2	Know the derivative in general and understand the mathematical definition of the derivative.	Derivation by definition	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
13	2	It helps students understand the laws of derivatives comprehensively and practically and enables them to use them efficiently in solving a variety of mathematical problems.	Derivative laws	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
14	2	Knowledge of integration and its importance in mathematics and scientific and engineering applications, including understanding the concept of space under the curve and the area between two curves.	Integration	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
15	2		Exam		
Daily Exam	•	ation and Attendance (5%) + Monthly Exam (3	5%) + Final Ex	kam (60%)
		d Teaching Resource		l - l. ml	
Required		ks (curricular books, if a erences (sources)	v	ulus by Thoma lus by James S	
Recom		books and references	Introduction to Mat	<i>,</i>	
		ournals, reports)	V. Hogg, Josep		
Fl	ectronic l	References, Websites	KhanAcademy (htt		

	Course Description Form								
1. (1. Course Name:								
	Human rights and democracy								
2. Co	ourse Co			.i acy					
			URI116						
3. Set	mester /	Year:							
		first sem	ester/first	z year					
4. De	scription	n Preparation Date:							
5 4	allabla (3/03/2024						
5. AV	allable A	Attendance Forms:	landatory						
6 Nu	mber of	Credit Hours (Total) / Num	¥	ts (Total)					
0. 114		(2) Hours, N		```´					
7. Co	ourse adı	ninistrator's name (mention		· /	name)				
		st Prof. Basira Abdullah Ahme							
	ourse Ob								
		student able to recogniz		-					
		charters, and to become fan			- • •				
	•	s of elections, and the means	of assigni	ng authorit	У				
9. Ie	9. Teaching and Learning Strategies								
	_		hom to wo	rk together	in the learning process				
Verbal	commu	nication with students, urging t		-					
Verbal using	commur written	nication with students, urging t communication skills to i	ncrease c	comprehensi	on, as well as the				
Verbal using brainst	commur written	nication with students, urging t communication skills to in nethod to attract students' atter	ncrease c	comprehensi	on, as well as the				
Verbal using brainst to the s	commun written orming r	nication with students, urging t communication skills to i nethod to attract students' atter ability.	ncrease c	comprehensi	on, as well as the				
Verbal using brainst to the s 10. Co	commun written orming r student's ourse St	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure	ncrease contion, activ	comprehensi rate the thin	on, as well as the king strategy according				
Verbal using brainst to the s	commun written orming r student's	nication with students, urging t communication skills to i nethod to attract students' atter ability.	ncrease contion, activ	comprehensi	on, as well as the				
Verbal using brainst to the s 10. Co	commun written orming r student's ourse St	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning	ncrease contion, activ	comprehensi vate the thin Learning	on, as well as the king strategy according				
Verbal using brainst to the s 10. Co	commun written orming r student's ourse St	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes	ncrease contion, activ	comprehensi vate the thin Learning	on, as well as the king strategy according Evaluation method				
Verbal using brainst to the s 10. Co	commun written orming r student's ourse St	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages	ncrease contion, activ	comprehensi vate the thin Learning	on, as well as the king strategy according Evaluation method Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes	ncrease contion, activ	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages through which the idea of	ncrease contion, activ	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution	ncrease contion, activ	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents	ncrease contion, active Unit or subject name Knowled ge	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents International human rigl	ncrease contion, activ	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2	nication with students, urging t communication skills to i nethod to attract students' atter ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents	ncrease contion, active Unit or subject name Knowled ge	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2 2	nication with students, urging t communication skills to in nethod to attract students' attent ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents International human right documents	ncrease contion, active Unit or subject name Knowled ge	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week 1	commun written orming r student's purse Str Hours 2	nication with students, urging t communication skills to in nethod to attract students' attention ability. Tructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents International human right documents Human rights in Islamic la	ncrease contion, active Unit or subject name Knowled ge Knowled ge	Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam,				
Verbal using brainst to the s 10. Co Week	commun written orming r student's purse Str Hours 2 2	nication with students, urging t communication skills to in nethod to attract students' attent ability. ructure Required Learning Outcomes The historical stages through which the idea of human rights passed Humanrights in constitution documents International human right documents	ncrease contion, active Unit or subject name Knowled ge Knowled	comprehensi rate the thin Learning method	on, as well as the king strategy according Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports				

		guarantee them is positive right to life, the right physical integrity, the right privacy,			
4	2	The right to nationality right to abolish slavery a slavery The right to se determination	ge, skills	lecture	Daily and monthly exam, attendance and reports
5	2	Guarantees to prevent attacks on human rights	knowled ge	lecture	Daily and monthly exam, attendance and reports
6	2	1-Human rights guarantees in Islamic law	Knowled ge, skill and attitude	lecture	Daily and monthly exam, attendance and reports
7	2	the right to movement Intellectual rights and freedoms	knowled ge	lecture	Daily and monthly exam, attendance and reports
8	2	The concept of freedom, the concept of anarchy, the concept of democracy, the historical development of the concept of democracy in the Mesopotamian civilization	knowled ge	lecture	Daily and monthly exam, attendance and reports
9	2	The pillars of democracy, the basic conditions of the democratic system and its characteristics	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
10	2	Features of the democratic system, types democracy	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
11	2	Forms of the system: indired democracy, democracy, concept, and manifestations	Knowled	lecture	Daily and monthly exam, attendance and reports
12	2	Different systems of election	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports

	n	1		1			
13	2	Democracy applications	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
14	2	Civil,society,democratic values and its functions	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
15	2	The report on human rights in Islam comprehended and surpassed all hypothetical trends, ancient and modern	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
11.Co	ourse Ev	aluation					
The gr	ade for	the semester examination is	(40%), d	ivided into	(10) grades for daily		
prepara	ation, par	rticipation, and submitting repo	orts, (30) g	rades for mo	onthly exams, with two		
monthl	y exams	for each exam (15) grades, and	d the grade	for the fina	l exam is (60%).		
12.Le	earning a	and Teaching Resources					
Require	Required textbooks (curricular books, if any)			Lectures prepared by the teacher based on relevant books and references.			
Main re	Main references (sources)			Human Rights and Democracy / Dr. Ghassan Karim Majhab, Amjad Zein Al-Abidin Tohm			
	Recommended books and references (scientific journals, reports)			Iraqi academic scientific journals, including			
Electro	nic Refe	rences, Websites	International journals .				

		Cours	se Description F	orm	
1. Cou	rse Name:				
		Engi	neering drawing		
2. Cou	rse Code:				
			ENDR117		
3. Sem	nester / Ye	ar:			
		First s	semester /first yea	r	
4. Des	cription Pr	reparation Date:			
			31/3/2024		
5. Ava	ilable Atter	ndance Forms:			
Is m	nandatory				
		edit Hours (Total) / N		otal)	
		ractical part, numb			,
		nistrator's name (n HAYAT HUSSEIN A		e than one na	ame)
• •		nt@uokirkuk.edu.i			
	irse Objecti		lq		
Course Obje	-	Introducing a student to g	anaral concents and defi	nitions in drawing	Engineering
	tho cor 2. I SI	wing is considered a lang ose who have studied it pr mplete accuracy. Introduce the student to th kill objectives for introdu ojection, and engineering	operly. The extent of ach the basics of dimensions a locing the student to exam	nievement in it dep and basic measure	pends on practice and ments
9. Tea		Learning Strategies			
Strategy	co en 2- thi 3-	nderstand all the engine rrect manner. Through o gineering concepts. Presenting questions al rough their answers Conducting daily and escriptive homework ass	education and full know bout the topic to demon l monthly exams, prej	vledge of the bas strate students'	ics and scientific understanding
10. Cours	e Structure	;			
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
		Lasting i suggitara	historical systemians of	Lectures +	Doily quartiana tasta
1	3	Lectures + exercises and practical	. historical overview of the science of	applications and	Daily questions + tests

				-	-
		observations	engineering drawing and	drawings	
			its principles		
			Definitions and		
			explanation of scientific		
			terms		
2	3	Lectures + exercises	Representing objects by	Lectures +	Daily questions + tests
		and practical	reducing and enlarging	applications and	
		observations	measurements	drawings	
			Examples of scale		
			operations		
3	3	Lectures + exercises	Modern and basic multi-	Lectures +	Daily questions + tests
U U		and practical	purpose drawing tools	applications and	
		observations	Basics of using tools	drawings	
4	3	Lectures + exercises	Identify the types of	Lectures +	Daily questions + tests
-		and practical	lines used in	applications and	
		observations	engineering drawings,	drawings	
			the rules for	_	
			implementing them,		
			arranging the drawing		
			paper and data table,		
			and writing numbers and		
			letters		
5	3	Lectures + exercises	Engineering operations	Lectures +	Daily questions + tests
3	U	and practical	(dividing lines and	applications and	
		observations	erecting columns), direct	drawings	
			drawings, connecting		
			future lines, arcs, and		
			tangents		
			Examples and drawings		
(3	Lectures + exercises	Regular polygons,	Lectures +	Daily questions + tests
6	5	and practical	parabolas and ellipses	applications and	
		observations	Examples and drawings	drawings	
-	3	Lectures + exercises		Lectures +	Daily questions + tests
7	5	and practical	Examination	applications and	
		observations		drawings	
0	3	Lectures + exercises	Projective	Lectures +	Daily questions + tests
8			-		Surj questions - tests
		9and practical observations	drawing/drawing sections parallel to basic	applications and drawings	
			levels	urawings	
	3				Daily questions + tests
9	S	Lectures + exercises	Determine the position	Lectures +	Dury questions + tests
		and practical	of the drop on the plate	applications and	
	2	observations	Examples and drawings	drawings	Daily quastions + tasts
10	3	Lectures + exercises	(Intersections in	Lectures +	Daily questions + tests
		and practical	projections)	applications and	
		observations	,	drawings	

11	3	Lectures + exercises and practical observations	Basic rules for setting dimensions	Lectures + applications and drawings	Daily questions + tests
12	3	Lectures + exercises and practical observations	Geometric perspective – xometric projection	Lectures + applications and drawings	Daily questions + tests
13	3	Lectures + exercises and practical observations	Sectional projections	Lectures + applications and drawings	Daily questions + tests
14	3	Lectures + exercises and practical observations	Rules for drawing engineering sectors	Lectures + applications and drawings	Daily questions + tests
15	3	Lectures + exercises and practical observations	Examination	Lectures + applications and drawings	Daily questions + tests

11. Course Evaluation

Daily and monthly tests

Participate by asking questions and opening scientific discussions related to the academic subject

Student activities through research, reports, and home and class assignments

And illustrations related to the study material

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Introduction to engineering drawing for students of College of Agriculture - Dr. Spokesman Sabri Hassa Mosul University Press
Main references (sources)	The Internet in general
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern
Electronic References, Websites	Iraqi academic journals, Research gate, US

		Course D	escription	Form	
1. (Course N	lame:			
		Computer A	nnlications	s/1	
2. Co	urse Co		ppileution		
			COAP118		
3. Ser	mester /	Year:			
		first sem	nester/ first	t year	
4. De	scription	n Preparation Date:			
			8/03/2024		
5. Av	ailable A	Attendance Forms:	7 1 .		
	1 6		Iandatory		
6. Nu	mber of	Credit Hours (Total) / Num			
7 Co	urca adr	(3) Hours, 1 ninistrator's name (mention		. ,	noma)
		st Prof. Basira Abdullah Ahm			
	urse Ob				iune uokinkuk.edu.ių
	.	1	-		
9. Te Verbal using brainst to the s	aching a commur written	.	increase c ntion, activ	comprehens ate the thin	ion, as well as the
9. Te Verbal using brainst to the s 10. Co	aching a commur written orming n student's	nd Learning Strategies nication with students, urging to communication skills to nethod to attract students' atte ability.	increase c	omprehens	ion, as well as the
9. Tex Verbal using brainstation to the s	aching a commur written orming n student's ourse Str	nd Learning Strategies ication with students, urging to communication skills to nethod to attract students' atte ability. ructure Required Learning	increase c ntion, activ Unit or subject	comprehens ate the thin Learnin g	ion, as well as the king strategy according
9. Te Verbal using orainst to the s 10. Co Veek	aching a commur written orming n student's ourse Stu Hours	nd Learning Strategies ication with students, urging to communication skills to nethod to attract students' atter ability. ructure Required Learning Outcomes Identifying the computer and its parts, turning the	increase c ntion, activ Unit or subject name Knowled	comprehens ate the thin Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam

		I			
4	3	Input units (mouse/keyboard), output units (Monitor), memory (RAM, ROM)	Knowled ge, skills and attitudes	lecture	Daily and monthly exam, attendance and reports
5	3	Secondary memory, hard disk parts, how to store information on the disk, information about the disk	knowled ge	lecture	Daily and monthly exam, attendance and reports
6	3	Introduction to the operating system (Windows), application software	Knowled ge, skill and attitude	lecture	Daily and monthly exam, attendance and reports
7	3	Practical exam (1)	knowled ge	lecture	Daily and monthly exam, attendance and reports
8	3	Windows - use the mouse, minimize/maximiz e windows - close windows, close windows, exit windows	knowled ge	lecture	Daily and monthly exam, attendance and reports
9	3	Moving windows from one place to another, controlling window size (width/height), taskbar - date, time	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
10	3	Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines - How to search for information on the network - Using the search button in the toolbar -	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
11	3	MY COMPUTER Desktop, Create a shortcut icon for an application or file, Recycle Bin - Window Explorer,	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports

		Format floppy disks			
12	3	Install files - select/choose folder, create folder - rename, delete file/folder, copy file/folder, move file/folder	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
13	3	Screen settings - screen saver, change mouse cursor - double transfer speed control	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
14	3	Software Installation and Uninstallation, Disk Information, Help Request) HELP	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
15	3	Practical exam (1)	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports

The grade for the semester examination is (40%), divided into (10) grades for daily preparation, participation, and submitting reports, (30) grades for monthly exams, with two monthly exams for each exam (15) grades, and the grade for the final exam is (60%).

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Lectures prepared by the teacher based on
Required textbooks (curricular books, if any)	relevant books and references.
Main references (sources)	Basic Principles of Computers/Magdi Abdull
Main references (sources)	Al-Wahdi/ Fourth Edition 2019
Recommended books and references	Iraqi academic scientific journals, including
(scientific journals, reports)	fraqi acadenne scientine journais, including
Electronic References, Websites	International journals .

		Course	Description Fo	/1 111	
1. Course	e Name:				
		Ara	bic language		
2. Course	e Code:				
			ARLA119		
3. Semes	ter / Yea	r:			
		first sei	nester/first year		
4. Descri	ption Pre	paration Date:			
	1 4 4		3/4/2024		
_		lance Forms:			
Manda 6 Numbe	<i>v</i>	it Hours (Total) / Nu	umber of Units (T	ntal)	
1 hour / 1 ur			inder of enits (10	Juli	
		strator's name (me	ntion all, if more	than one na	ame)
Name: Hem					
Email:	hymnsae	ed@uokirkuk.edu.iq			
8. Course	Objectiv	es			
Course Objectiv	es				hat is related to them pare to write a scient
		8	well as help him lear		bare to write a scient
9. Teachi	ng and Le	earning Strategies			
Strategy		Make the stud	ent able to know	the Arabic	language, which
			-	-	p the student to
			te scientific rese		p the student to
		know the comm	non errors in offic	cial dooks.	
10. Course S	Structure				
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
WEER	Tiours	Outcomes	-	method	method
1		Sections of speech	name	methou	method
-		and what is related			
		to it in terms of			
2		Tags Sections of nominal			
_		and verbal			
3		sentences			
3		Write the hamza correctly			
4		The difference			
			41		

	between dha and	
	dha	
5	The difference	
	between the fatha	
	and marbuta tā'	
6	Numbers in the	
	Arabic language	
7	punctuation marks	
8	Correction of	
	incorrect words	
9	Use movements	
	correctly	
10	Say and don't say	
11		
12		
13		
14		
15		
11. Course Ev	aluation	
Distributing the se	core out of 100 according to th	e tasks assigned to the student such as daily
_	oral, monthly, or written exams, r	
12. Learning a	nd Teaching Resources	
General Arabic lang	juage	Human rights, children and democracy
Main references (so	urces)	Human rights in Islamic law and international law -
		Human rights and their guarantees, public freedoms and human rights
Recommended bo	oks and references (scientific	
journals, reports)		
Electronic Reference	es. Websites	

1. Course Name:

Organic Chemistry

2. Course Code:

ORCH121

3. Semester / Year:

Second semester/First year

4. Description Preparation Date:

28/03/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours of (2) hours for the theoretical part and (3) hours for the practical part number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Thikra Ahmad Hassan e-mail: thikra.ahmed@uokirkuk.edu.iq

8. Objectives of the decision

Organic chemistry of the second stage deals with the study and determination of physical constants of organic compounds such as the degree of fusion, boiling and others and knowledge of how to purify the organic compound by laboratory methods and how to separate compounds from each other and detect the unknown organic compound by color methods has been interacted between the practical and theoretical aspect of the student to benefit from the greatest amount of information

** Knowledge of this area

9. Teaching and learning strategies

1- describe methods of assigning physical constants to organic compounds such as the degree of fusion

** And boiling. 2- Describe the general methods of purification

3 - Study and identify methods of separation and detection of the unknown organic compound

					<u>_</u>] •
Method of assessment	Way of learning	Name of unit or subject	Required learning outcomes	Hour s	The week
Daily and monthly exam, attendance		Definition of organic			
and reports	Lecture	chemistry, its	Knowledge	5	1
		importance and the			

		types of interactions			
		used in it			
Daily and monthly exam_attendance		Study of alkane-			
exam, attendance and reports	Locturo	saturated	Va evile dao	- -	
	Lecture	hydrocarbon	Knowledge	5	2
		compounds			
Daily and monthly exam, attendance		Study of			
and reports		unsaturated alkene			
	Lecture	hydrocarbon	Knowledge	5	3
		compounds			
Daily and monthly exam, attendance		Study of saturated			
and reports	Student	and unsaturated	Knowledge		
	groups	hydrocarbon	and skill	5	4
		compounds			
Daily and monthly exam, attendance		Study of non-			
and reports	The lecture	alkene hydrocarbon	Knowledge	5	5
ļ		compounds			
Daily and monthly exam, attendance		Study of aromatic			
and reports	Lecture	hydrocarbon	Knowledge and skill	5	6
		compounds			
Daily and monthly	1	The first month			
exam, attendance and reports	Lecture	exam	Knowledge	5	7
Daily and monthly exam, attendance		** Alcohol and			
and reports	Lecture	methods of	Knowledge	5	8
		preparation			
Daily and monthly exam, attendance		** Phenols have			
and reports	Lasturo	their properties and	Knowledge	5	
	Lecture	methods of	and skill	5	9
ļ		preparation			

Daily and monthly		Reactions of alcohol	Knowledge	_	10
exam, attendance and reports	Lecture	and phenols	and skill	5	10
Daily and monthly exam, attendance		Aldehydes have			
and reports	-	their properties and	Knowledge	_	
	The lecture	methods of	and skill	5	11
		preparation			
Daily and monthly exam, attendance		Ketones have their			
and reports		properties, methods			
		of preparation and	Knowledge	_	
	Lecture	reactions of	and skill	5	12
		aldehydes and			
		ketones			
Daily and monthly		Second month	Knowledge	_	10
exam, attendance and reports	Lecture	exam	and skill	5	13
Daily and monthly exam, attendance		Carboxylic acids		5	
and reports		have their			
	Lecture	properties and	Knowledge and skill		14
		methods of			
		preparation			
Daily and monthly		The Secretary and	Knowledge	_	
exam, attendance and reports	Lecture	the effective group	and skill	5	15
11. Evaluation	of the decision	n		1	
reporting, and (30) m exam score of (60%)	nonthly exam scc	tributed (10) scores for one of two monthly exame			
12. Sources of lea Lectures prepared by			Required books	(methoda	ology if
books and reference	S.		any)	•	
General organic che	mistry Dr. Ahmad	d Fathi Sayed Ahmed	Principal referen		,
Iraqi academic scien Kirkuk University of S		uding the Journal of	Recommended supporting reference journals, reports	ences (sc)	ientific
International magazi	nes within the Sc	opas absorbers	Electronic refere	ences. Inte	ernet sit

1.											
	Course N	Name:									
		P	rinciple of Geol	logy							
2. Co	ourse Co	de:									
PRGE122											
3. Se	mester /	Year:									
			t semester/ Firs	st year							
4. De	escription	n Preparation Date:									
			1/4/2024								
5. Av	v ailable A	Attendance Forms:									
	1		Mandatory								
6. Ni	imber of	Credit Hours (Total) / 2									
		× ′	ours, Number of	× /							
		ninistrator's name (mer	· · · · · · · · · · · · · · · · · · ·								
		Ali hakeem dohan Emai	: <u>Annakeeni @</u>	<u>uokirkuk.ee</u>	<u>iu.iq</u>						
	ourse Ob	eology enables us to kn	ow the types of	F soil its oc	mposition source and						
	• •	discover the sources and	• 1		1						
canals.		discover the sources and	depuis of grou	nuwater, an	a establish agnealana						
		nd Learning Strategies									
		nication with students, ur	ging them to wo	rk together	in the learning process.						
		communication skills		-	• •						
0				-							
to the s	student's	ability, and conduct scien	ntific visits to ag	ricultural pr	brainstorming method to attract students' attention, activate the thinking strategy according to the student's ability, and conduct scientific visits to agricultural projects.						
10. C	ourse Sti	to the student's ability, and conduct scientific visits to agricultural projects. 10. Course Structure									
Week		ructure			ojects.						
· · · · ·	Hours	Required Learning	Unit or	Learning							
	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method						
	Hours	Required Learning Outcomes Introduction to		U	Evaluation method						
1	Hours 5	Required Learning OutcomesIntroduction to geology - the concept		U	Evaluation method Daily and monthly exam,						
1		Required Learning Outcomes Introduction to geology - the concept of its origin and	subject name	method	Evaluation method						
1		Required Learning Outcomes Introduction to geology - the concept of its origin and branches	subject name	method	Evaluation method Daily and monthly exam, attendance and reports						
1		Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena	subject name	method	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,						
	5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise	subject name	nethod	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports						
	5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their	subject name	nethod	Evaluation methodDaily and monthly exam, attendance and reportsDaily and monthly exam, attendance and reportsDaily and monthly exam, attendance and reports						
2	5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods	subject name knowledge knowledge knowledge	method lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports						
2	5 5 5 5	Required Learning OutcomesIntroduction to geology - the concept of its origin and branchesGeological phenomena and how they ariseMinerals and their classification methodsWeathering: its types	subject name knowledge knowledge	method lecture lecture	Evaluation method Daily and monthly exam, attendance and reports						
2 3	5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods	subject name knowledge knowledge knowledge Knowledge,	method lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports						
2 3 4	5 5 5 5 5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods Weathering: its types and its relationship to	subject name knowledge knowledge knowledge Knowledge, skills and attitudes	method lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports						
2 3	5 5 5 5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods Weathering: its types and its relationship to soil formation	subject name knowledge knowledge knowledge Knowledge, skills and	method lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports						
2 3 4 5	5 5 5 5 5 5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods Weathering: its types and its relationship to soil formation Rock cycle in nature, igneous rocks	subject name knowledge knowledge knowledge Knowledge, skills and attitudes knowledge Knowledge	method lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports						
2 3 4	5 5 5 5 5	Required Learning Outcomes Introduction to geology - the concept of its origin and branches Geological phenomena and how they arise Minerals and their classification methods Weathering: its types and its relationship to soil formation Rock cycle in nature,	subject name knowledge knowledge knowledge Knowledge, skills and attitudes knowledge	method lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports						

			attitude		
7	5	Classification of sedimentary rocks	knowledge	lecture	Daily and monthly exam, attendance and reports
8	5	Classification of Metamorphic rocks	knowledge	lecture	Daily and monthly exam, attendance and reports
9	5	Water cycle: surface water	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
10	5	underground water	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
11	5	Minerals and natural rocks in Iraq	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
12	5	Natural resources survey	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
13	5	The relationship of geology to soil	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
14	5	Rock erosion	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
15	5	Transport and deposition of rocks	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports

11.Course Evaluation

The science of geology is of great importance in agriculture and the environment. It helps in studying soil and determining its chemical, physical and mechanical properties. It is concerned with lands and their components. It also helps in understanding the relationship between the geological characteristics of the soil and the plants that can be grown in it.

Moreover, geology helps uncover natural resources such as groundwater, gemstones, precious metals, oil and natural gas, which is the basis for sustainable agriculture and economic growth anywhere.

Geology also helps in studying natural and geographical areas and sites of environmental influence, and helps in identifying activities.

12.Learning and Teaching Resources				
Required textbooks (curricular books, if any)	Lectures prepared by the teacher based on			
Required textbooks (curricular books, if any)	relevant books and references.			
Main references (sources)	General Geology, written by Dr. Abdul Hadi			
Main references (sources)	Al-Sayegh and Dr. Farouk Al-Omari			
Recommended books and references	Iraqi academic scientific journals, including			
	Kirkuk University Journal of Agricultural			
(scientific journals, reports)	Sciences			
Electronic References, Websites	International journals included in Scopus			

			Course Descr	iption Form					
1. Course Name:									
			Fruit Pro	duction					
2. Co	ourse Co	de:							
			FRPR	.123					
3. Se	mester /	Year:							
			First semester	/ First year					
4. De	escription	n Preparation D							
			28/03/2	2024					
5. Av	v ailable A	Attendance Form							
			Manda						
6. Nu	imber of	Credit Hours (Fotal) / Number o						
			(^ε) Hours, Numb	· · /					
				f more than one nar					
		Prof. Dr. Raad Al	nmed Medan En	nail: Raad132@uoki	rkuk.edu.iq				
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			-	reality of horticult	•				
		_		and establishing orcl	-				
				d enable them to un	dertake agricultura				
		-	work without waiting for work in state institutions.						
9. Teaching and Learning Strategies									
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		skills	trees		agricultural research and experiments station	exam, attendance and reports	
6	4	Knowledge and skills	Characteristics of good seeds		lecture	Daily and monthly exam, attendance and reports	
7	5	Knowledge and skills	Factors affect the developmon flower buc	ent of	lecture	Daily and monthly exam, attendance and reports	
8	5	Knowledge and skills	Planning a implementi orchard constructio	ng	Field scenes at the agricultural research and experiments station	Daily and monthly exam, attendance and reports	
9	5	Knowledge and skills	Windbreal	ks	lecture	Daily and monthly exam, attendance and reports	
10	5	Knowledge and skills	pruning		lecture	Daily and monthly exam, attendance and reports	
11	5	Knowledg e and skills	Seed dormancy		lecture	Daily and monthly exam, attendance and reports	
12	5	Knowledge and skills	Fertilizing fruit trees		lecture	Daily and monthly exam, attendance and reports	
13	5	Knowledge and skills	Fruit ripeni	ng	lecture	Daily and monthly exam, attendance and reports	
14	5	Knowledge and skills	Methods of harvesting a packing fru	and	lecture	Daily and monthly exam, attendance and reports	
15	5	Knowledge and skills	Orchard service operation		Field scenes at the agricultural research and experiments station	Daily and monthly exam, attendance and reports	
11. Co	ourse Evalu	uation					
submitti final exa	ng reports, Im grade is	(10) grade for the practice (10), and the fit	ctical semester e	exams, a	0) grades for daily preparednd (20) for the theoretical0) The final theoretical example.	semester exams, and the	
12. Le	arning and	d Teaching Resources	5	Last	100 mmonous d h 41 41	housed on relevant 11-	
Required	l textbooks	(curricular books, if a	ny)	referen	res prepared by the teacher nces. uous Fruit Production / Wr		
Main ref	Ferences (so	ources)		Al Nu	aimi, Youssef production, Ayad Hani Al-		
		ks and references (scie	entific	Iraqi a	cademic scientific journals	s, including Kirkuk	
	reports)	TT 7 1 1			rsity Journal of Agricultura		
Electron	1c Reference	ces, Websites		Inter	national journals included	in Scopus	

Course Description Form 1. Course Name: **Principles of Agricultural Economic** 2. Course Code: **AGEP124** 3. Semester / Year: Second semester/ First year 4. Description Preparation Date: 28/03/2024 5. Available Attendance Forms: Mandatory 6. Number of Credit Hours (Total) / Number of Units (Total) (2) Hours, Number of units (2) 7. Course administrator's name (mention all, if more than one name) Name: Prof. Dr. khattab Abdullah Mohammed Email: khattab1981@uokirkuk.edu.iq 8. Course Objectives The course aims to raise the level of students' knowledge about general concepts in the economy in general and its types, economic systems and the importance of the agricultural sector among other economic sectors, identifying the most important problems facing it and ways to reduce them, and displaying and marketing agricultural commodities. 9. Teaching and Learning Strategies Verbal communication with students, urging them to work together in the learning process, using written communication skills to increase comprehension, as well as the brainstorming method to attract students' attention, activate the thinking strategy according to the student's ability, and conduct scientific visits to agricultural projects. **10.** Course Structure **Required Learning** Unit or Learning Week Hours **Evaluation method Outcomes** subject name method General concepts in Daily and monthly exam, 2 knowledge 1 lecture economics attendance and reports Types of economy, Daily and monthly exam, 2 2 economic systems, knowledge lecture attendance and reports productive resources The importance of the Daily and monthly exam, 3 2 knowledge lecture agricultural sector attendance and reports Economic Knowledge, characteristics of Daily and monthly exam, 4 2 skills and lecture attendance and reports contemporary attitudes agriculture Risk and uncertainty in Daily and monthly exam, agricultural work 5 2 knowledge lecture attendance and reports

6 2 Production function Knowledge, skill and attitude lecture Daily and monthly exam, attendance and reports 7 2 Demand for agricultural commodities and its types knowledge lecture Daily and monthly exam, attendance and reports 8 2 Factors affecting demand for agricultural commodities knowledge lecture Daily and monthly exam, attendance and reports 9 2 Elasticity of demand and its types Knowledge, skill lecture Daily and monthly exam, attendance and reports 10 2 Display agricultural commodities Knowledge, skill lecture Daily and monthly exam, attendance and reports 11 2 Factors affecting the supply of agricultural commodities Knowledge, skill lecture Daily and monthly exam, attendance and reports 13 2 Agricultural production function skill Knowledge, lecture baily and monthly exam, attendance and reports 15 2 Economic problems: inflation Knowledge, skill lecture Daily and monthly exam, attendance and reports 15 2 Economic problems: inflation Knowledge, slecture lecture Dai							
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(scientific journals, reports) Kirkuk University Journal of Agricultural Sciences	Main r	eferences	s (sources)				
Electronic References, Websites International journals included in Scopus	(scient				Kirkuk University Journal of Agricultural		
	Electro	onic Refe	rences, Websites		Internati	onal journa	ls included in Scopus

Course Description I of m							
1. Course Name:							
Mathematics2							
2. Course Code:							
MATH125							
3. Semester / Year:							
2 nd semester / First year							
4. Description Preparation Date:							
31/3/2024							
5. Available Attendance Forms:							
Classroom attendant							
6. Number of Credit Hours (Total) / Number of Units (Total)							
5							
7. Course administrator's name (mention all, if more than one name)							
Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq							
8. Course Objectives							
Course Objectiv							
9. Teaching and Learning Strategies							
Strategy							

10. Course Structure							
Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation		
		Outcomes		method	method		
1	2	Helps to understand the derivative in general, understand the mathematical definition of the derivative, and solve more advanced equations.	Derived by definition (for advanced equations)	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.		
2	2	Helps to understand the laws of derivatives in general and the derivative of trigonometric functions.	Laws of Derivative and Derivative of Trigonometric Functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.		
3	2	Helps to understand analyze, and apply logarithmic and exponential functions effectively	Derivative of logarithmic functions, exponential functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.		

		implicit derivatives, assimilate these		Solving exercises on	Student discussion, board solution,
4	2	concepts and apply them effectively in solving a variety of mathematical problems,	Implicit derivative	the board with participation of student.	daily exam and homework solutions.
5	2	Help to use the derivative to calculate the slope of the tangent, know the mathematical concept of the second derivative, how to calculate it, and analyze the behavior of the function at certain points.	The equation of slope of the tangent and the second derivative	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
6	2	Introduce students to the properties of the maxima and minima limits.	Find the maxima and minima Limits	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
7	2		exam		
8	2	It helps determine the behavior of a function and its general appearance on the graph to analyze functions and understand their behavior.	Convex and Concave Region	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
9	2	Contributes to the development of mathematical, visual and analytical comprehension skills.	Drawing Functions	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
10	2	Introduce students to matrices and how to perform mathematical operations such as addition and subtraction.	Matrices, Addition and Subtraction of Matrices	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
11	2	It helps students how to get solutions to matrix equations and find unknowns through equality of matrices.	Matrix equations (equality of matrices)	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
12	2	It helps the student in understanding matrices, how to represent them, and the addition, subtraction, and multiplication operations related to them.	Multiplying matrices	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.
13	2	Help Students to gain a	Solving more examples	Solving	Student discussion,

		good understanding of the concept of matrix multiplication and how to implement it and increase their algebraic arithmetic skills.	about Multiplying matrices.	exercises on the board with participation of student.	board solution, daily exam and homework solutions.		
14	2	Help to know the concepts of determinants, including what determinants are, their different types, and how to use them to solve problems.	Determinists	Solving exercises on the board with participation of student.	Student discussion, board solution, daily exam and homework solutions.		
15	2		Exam				
11. Cours	se Evalu	ation					
Daily Exam, F	articipa	tion and Attendance (5%	%) + Monthly Exam (35 ⁰	%) + Final Exa	um (60%)		
12. Learn	12. Learning and Teaching Resources						
Required t	Required textbooks (curricular books, if any) Calculus by Thomas						
	Main references (sources) Calculus by James Stewart						
	Recommended books and references Introduction to Mathematical Statistics" by Robert						
		ırnals, reports)	V. Hogg, Josep				
Elec	ctronic R	eferences, Websites	KhanAcademy (htt	ps://www.kh	anacademy.org/)		

1. Course Name:

Computer Applications/2

2. Course Code:

COAP126

3. Semester / Year:

second semester/ first year

4. Description Preparation Date:

28/03/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(3) Hours, Number of units (1)

7. Course administrator's name (mention all, if more than one name)

Name:Assist Prof. Basira Abdullah Ahmed Email: <u>baseraabdullah@uokirkuk.edu.iq</u>

8. Course Objectives

Developing the student's abilities to master making tables and writing mathematical equations via the computer

9. Teaching and Learning Strategies

Verbal communication with students, urging them to work together in the learning process, using written communication skills to increase comprehension, as well as the brainstorming method to attract students' attention, activate the thinking strategy according to the student's ability.

<u>10. Co</u>	10. Course Structure								
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method				
1	3	Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file	Knowled ge	lecture	Daily and monthly exam, attendance and reports				
2	3	Inverting the language between Latin and Arabic - preparing an Arabic and Latin paragraph - preview before printing - printing the worksheet - specifying the text - font and size - underlining - changing letter case	Knowled ge	lecture	Daily and monthly exam, attendance and reports				
3	3	Moving and copying	Knowled	lecture	Daily and monthly exam,				

		information - Word clipboard -	ge		attendance and reports
		Search and replace - Numbers			
		and bullets - Spell checker -			
		Undo - Reverse undo - Page			
		setup - Page margins - Text			
		alignment - Line spacing			
	3	Inserting a table - Inserting			
		rows and columns - Selecting	Knowled		
4		the row/column - Selecting the	ge, skills	1	Daily and monthly exam,
4		table - Adding borders and	and	lecture	attendance and reports
		deleting cells - Shading the	attitudes		
		frame			
	3	Merge and split cells - Split the			
		table - Change the height and		lecture	
5		width of cells - Auto fit -	knowledg		Daily and monthly exam,
		Repeat the table title - Header	e		attendance and reports
		and footer - Sorting text			
	3	Page numbering - writing code			
		- toolbar - drawing - deleting	Knowled		
		drawing shapes - filling -	ge, skill	1	Daily and monthly exam,
6		drawing line color - inserting,	and	lecture	attendance and reports
		editing, deleting and moving	attitude		-
		the image			
	3	Microsoft Excel: Run it - Excel			
7		worksheet - Enter data - Save	knowledg	1	Daily and monthly exam,
7		the file - Print the worksheet -	e	lecture	attendance and reports
		Exit the program			
8	3	Practical exam	knowledg	lecture	Daily and monthly exam,
0			e	lecture	attendance and reports
	3	Selecting cells - types			
		of data - using			
		mathematical formulas			
		to select data - relative			
		and absolute addresses			
		- formulas that	Knowled		Daily and monthly exam,
9		produce error values -	ge, skill	lecture	attendance and reports
		moving cells - copying	ge, shin		anonumee and reports
		data			
		Move or copy a worksheet and			
		replace - move to a cell - delete			
		cells - erase/insert a row or			
		cells - erase/insert a row or column			
	3	cells - erase/insert a row or column Organizing the address list -			
	3	cells - erase/insert a row or column Organizing the address list - Copying images and texts -			
	3	cells - erase/insert a row or column Organizing the address list - Copying images and texts - Splitting web pages - Printing	Knowled		Daily and monthly even
10	3	cells - erase/insert a row or column Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines -	Knowled	lecture	Daily and monthly exam, attendance and reports
10	3	cells - erase/insert a row or column Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines - How to search for information	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
10	3	cells - erase/insert a row or column Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines -		lecture	• •

11	3	Modify the height of a row or column - show and hide the row or column	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
12	3	Rename the worksheet - font type, size and style	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
13	3	Shape numbers - align data - add borders	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
14	3	Fill cells - sort data - create a chart	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
15	3	Edit Created Layout - Header/Footer Insert and remove a page break	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports		
The gra	ation, and	Luation the semester examination is (40%) submitting reports, (30) grades for and the grade for the final exam is	monthly ex				
		d Teaching Resources	(00/0).				
	Required textbooks (curricular books, if any)			Lectures prepared by the teacher based on relevant books and references.			
Main ret	Main references (sources)			Computer basics and office applications (Part second Ziad Muhammad Aboudi, Ghassan Hamid Abdel Majeed, Mustafa Diaa Al-Hassani			
	nended bo , reports	oks and references (scientific)	Iraqi academic scientific journals, including				
Electron	ic Referen	nces, Websites	Internatio	nal journals .			

		Course D	escription Plan	e surveying	
1.	Course N	Name:			
			Land Survey		
2. Co	ourse Co	de:			
			LASU127		
3. Se	mester /	Year:			
		Seco	nd semester/fir	st year	
4. De	scription	n Preparation Date:			
			2/4/2024		
5. Av	ailable A	Attendance Forms:			
			Mandatory		
6. Nu	mber of	Credit Hours (Total) /]		· · · · · ·	
			ours, Number of		
		ministrator's name (mer			
		Ali hakeem dohan Email	l: <u>Alihakeem @</u>	uokirkuk.ed	<u>u.iq</u>
	ourse Ob	v			
	U	student to the general ba	•	• • •	0
	•	manage surveying techn	-		
	-	student to using some su			
		ice, so that he can perfo			
		measuring levels or meas		-	
		rveys, such as surveying		-	
		vishes, to develop his cap			
		professional surveyor an			
-		lent the basic principles of	of surveying, tra	uning him o	n the use of surveying
	-	ring the following skills:			
		various surveying science			
-		surveying equipment to ol	-	ЗУ	
	U	rdinates and determining	locations		
	-	nd Learning Strategies	aina tham to me	nte costhor s	n the learning and area
		nication with students, urg		-	• •
0		communication skills		-	
	-	nethod to attract students			
		ability, and conduct scier	ittlic visits to ag	ficultural pr	ojects.
10. 0	ourse Sti		Unit or	Loorning	
Week	Hours	Required Learning Outcomes	subject name	Learning method	Evaluation method
		Definition of space, its	subject name	memou	
1	5	types, branches and	knowledge	lecture	Daily and monthly exam,
1		• 1	KIIOWICUge		attendance and reports
	1	how it dayalong			uttendunce und reports
-	_	how it develops			-
2	5	how it develops Basic principles of	knowledge	lecture	Daily and monthly exam, attendance and reports

		space Units of measurement (its parts, multiples)			
3	5	scale, (types, methods of application)	knowledge	lecture	Daily and monthly exam, attendance and reports
4	5	Surveying using the measuring wheel (on the map and on the ground)	Knowledge, skills and attitudes	lecture	Daily and monthly exam, attendance and reports
5	5	Longitudinal measurements and longitudinal measuring tools	knowledge	lecture	Daily and monthly exam, attendance and reports
б	5	Scanning with tape	Knowledge, skill and attitude	lecture	Daily and monthly exam, attendance and reports
7	5	Cadastral errors, their types and sources	knowledge	lecture	Daily and monthly exam, attendance and reports
8	5	Methods for measuring horizontal distances directly Knowing the obstacles that prevent measurement	knowledge	lecture	Daily and monthly exam, attendance and reports
9	5	Methods of dropping columns	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
10	5	Methods of indirect measurement through a device Settlement	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
11	5	Distance whiskers method and shadow method	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
12	5	Anvar method	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
13	5	Settlement methods	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
14	5	Topographical area	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
15	5	Application of measuring distances using theodolite	Knowledge, skill	lecture	Daily and monthly exam, attendance and reports
		valuation	<u> </u>		
The go	bals can l	be summarized through the	e following poin 59	nts:	

1. Establishing the required locations on the ground based on known points

2. Identify and determine the locations of agricultural lands and their heights above sea level

. 3. Finding land areas according to their types directly or through maps

. 4. Giving an idea about water resources and their distance from agricultural lands

. 5. Assist in designing irrigation and drainage networks and constructing dams and water tanks

6. Planning the locations of agricultural roads of all types and the boundaries of forest divisions

7. Determine the types and densities of vegetation cover in different areas using aerial photographs and remote sensing methods

8. Providing the necessary information for constructing agricultural buildings

9. Providing the necessary information for making contour lines, terraces, and corrugations on slopes

10. Assist in determining the boundaries of soil units when classifying lands.

12.Learning and Teaching ResourcesRequired textbooks (curricular books, if any)Lectures prepared by the teacher based on
relevant books and references.Main references (sources)Principle of plane and Topographic Surveying
written by Dr. Riad Saleh Al-KhafafRecommended books and references
(scientific journals, reports...)Iraqi academic scientific journals, including
Kirkuk University Journal of Agricultural
SciencesElectronic References, WebsitesInternational journals included in Scopus

Course Description Form
1. Course Name:
English language 1
2. Course Code:
ENLA128
3. Semester / Year:
second semester/first year
4. Description Preparation Date:
31/03/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
1 hour
7. Course administrator's name (mention all, if more than one name)
Name: Berevan Qader Omar Email: beree.omer@gmail.com
8. Course Objectives
Teaching this curriculum aims to make the student familiar with the English language as an
international language that help the student get benefits from it in his scientific life widely.
9. Teaching and Learning Strategies
It is a semi-integrated curriculum for the beginner level that includes the necessary basics

for learning English language in a simplified way with exercises. It includes nouns, verbs,

interrogatives, adjectives, and adverbs.

10. Co	10. Course Structure						
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method		
1	1	Introduction to part of speech in English	Knowledge	lecture	Exercise		
2	1	Nouns in English	Knowledge	lecture	Exercise		
3	1	Singular and plural	Knowledge	lecture	Exercise		
4	1	Question words	Knowledge	lecture	Exercise		
5	1	Tense of verbs	Knowledge	lecture	Exercise		
6	1	Present simple for beginner	Knowledge	lecture	Quiz		
7	1	Present continuous for beginner	Knowledge	lecture	Exercise		
8	1	Past simple for beginner	Knowledge	lecture	Exercise		
9	1	Past continuous for	Knowledge	lecture	Exercise		

		beginner					
10	1	adjectives	Knowledge	lecture	quiz		
11	1	Pronouns	Knowledge	lecture	quiz		
12	1	adverbs	Knowledge	lecture	Exercise		
13	13 1 Adverb of frequency Kn			lecture	Exercise		
14	14 1 Some & any Kn			lecture	Exercise		
15	15 1 Modal verbs Kn			lecture	Quiz		
11.Co	ourse Ev	aluation					
Semester endeavor (40 marks): 15 marks for the first month exam + 5 marks for quiz							
		15 mark	as for second mo	second month exam + 5 marks for quiz			
Final exam (60 marks)							
12.Le	arning a	and Teaching Resources	5				
Dequin				New headway plus (beginner student book			
Require	Required textbooks (curricular books, if any)			written by : john and liz soars			
Main re	Main references (sources)			Cambridge press			
Recom	mended	books and references	My Enali	ah library w	abaita		
(scienti	fic journ	als, reports)		sh library w	CUSIIC		
Electro	nic Refe	rences, Websites	You tub	e and some	useful websites		

		Bio-chemistry						
13. Decision co	de	v						
		BICH211						
14. Chapter/yea	r							
		rst semester/ Second year						
15. Date of prep	paration of	f this description						
		28/03/2024						
16. Forms of pr	esence av							
17 Number of I		Mandatory	Ν					
		al)/ number of units (tota theoretical part and (3) ho		prostigo	Loort			
number of units (3		theoretical part and (3) ho		practica	i part,			
	/	dministrator (if more tha	n one name	e is				
mentioned)								
/	d Abdul Az	iz Lateef email: mahammo	lazyz@uoki	rkuk.edu	ı.iq			
19. Objectives			y –		•			
** Have an underst	anding of tl	he basic topics in biochemist	ry and their	applicati	ons in			
the field of laborator	ries with ap	propriate knowledge of the d	ifferent axes	of chemi	stry.			
-		g strategies acquire a reaso						
-		what is recognized among th	e different ur	niversitie	s of			
the world, especially	y the sober of	ones.	Density					
Method of assessment	Way of learning	Name of unit or subject	Required learning outcomes	Hours	The week			
Daily and monthly		Biochemistry and its fields						
exam, attendance	Lecture	The components of the living	Knowledge	5	1			
and reports		cell and its functions		-				
Daily and monthly		Carbohydrates – their						
exam, attendance		-						
and reports	Lecture	importance is defined by their	Knowledge	5	2			
		sections						
Della and south		0.1						
Daily and monthly exam, attendance		Single sugars - similar In monosaccharides - the						
and reports	Lecture	derivatives of monosaccharides	Knowledge	5	3			
		- the ring structure of sugars						
Daily and monthly		Low-lying polysaccharides -						
exam, attendance and reports	Student	their reduced and unreduced	Knowledge	5	4			
	groups		and skill					
		types						

and reports de nt p Daily and monthly exam, attendance and reports L Daily and monthly exam, attendance and reports L Daily and monthly exam, attendance and reports L	trips to some epartme its in the province Lecture	Many homogeneous and heterogeneous sugars The first month exam Fat – define its importance – fatty acids its sections – their composition – their interactions – geometric similarities to fatty acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat	Knowledge and skill Knowledge Knowledge	5 5 5	5
exam, attendance and reports Daily and monthly exam, attendance and reports L Daily and monthly exam, attendance and reports L	Lecture	Fat – define its importance – fatty acids its sections – their composition – their interactions – geometric similarities to fatty acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat	and skill	5	7
exam, attendance and reports		fatty acids its sections – their composition – their interactions – geometric similarities to fatty acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat			
and reports		composition – their interactions – geometric similarities to fatty acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat			
Daily and monthly exam, attendance and reports		 geometric similarities to fatty acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat 			
exam, attendance and reports	Lecture	acids Fat sections – simple fats – types (oils, fats and candles) – their composition – fat	Knowledge	5	
exam, attendance and reports	Lecture	Fat sections – simple fats – types (oils, fats and candles) – their composition – fat	Knowledge	5	
exam, attendance and reports	Lecture	types (oils, fats and candles) – their composition – fat	Knowledge	5	
and reports L	Lecture	their composition – fat	Knowledge	5	
	Lecture		Knowledge		L 0
Daily and monthly		ocnetente	_	5	8
Daily and monthly		constants			
5		And the shape and shape of	Knowledge	_	
exam, attendance L and reports	Lecture	the boat – the shape of it	and skill	5	9
Daily and monthly		Amino acids – their sections –			
exam, attendance and reports	Lecture	their structures – amino acid	Knowledge and skill	5	10
		properties – their interactions	and skill		
Daily and monthly		Peptides – proteins – defined			
	Student	by their sections – protein	Knowledge and skill	5	11
	groups	synthesis levels – denera			
Daily and monthly exam, attendance L and reports	Lecture	Second month exam	Knowledge and skill	5	12
Daily and monthly		Nucleic acids – their			
exam, attendance and reports		importance as nucleotides –			
•	Lecture	their functions – their	Knowledge and skill	5	13
		composition – types of nucleic			
		acids			
Daily and monthly		Enzymes – defined – the			
exam, attendance and reports	0 04· · · · -	mechanism of action of the	Knowledge	-	
	Lecture	enzyme – classified – inert	and skill	5	14
		and active enzymes – factors			

					·
		affecting the speed of the			
		enzymatic reaction			
Daily and monthly	_	Explain the lock and key	Knowledge		
exam, attendance and reports	Lecture	theory	and skill	5	15
21. Evaluation of th	e decision				
	onthly exam	listributed (10) scores for daily score of two monthly exams			
22. Sources of learn	ning and tea	aching			
Lectures prepared by the teacher based on the relevant books			Required books		
and references.			(methodology, if any)		
Chemical by the Dalai Lama			Principal references (sources)		
Iraqi academic scientific journals, including the Journal of the			Recommended books and		
University of Kirkuk fo	r Chemical	Sciences Biochemistry and its	supporting references		
fields			(scientific jou reports)	urnals,	
International magazine	es and Scop	as absorption magazines	Electronic re	ferences,	Interne
			sites		

1. Course Name:	
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Principles of soil science

2. Course Code:

PRSO212

3. Semester / Year:

First Semester / Second Year

4. Description Preparation Date:

1/4/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours (2) hours for the theoretical part and (3) hours for the practical part, the number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Prof. Dr. Dalshad Rasool Azeez

Email: dr_dalshad@uokirkuk.edu.iq

Assist. Lecturer.Noorjan Essmat Noori

essmat.noorjan@uokirkuk.edu.iq

8. Course Objectives

Course Objectives

1- Introducing the student to the role of each component of the soil in the development of the soil.

- 2- Knowledge of soil formation factors and processes.
- 3- The importance and role of agricultural soil.

9. Teaching and Learning Strategies

Strategy	The course includes the concepts of the soil and its main components, soil factors
	and processes, and the study of its physical properties (soil structure - soil texture -
	bulk and real density - porosity - soil color - soil temperature - soil air) and
	chemical properties (soil solution - acidity - salinity - organic matter content -
	fertility)

10. Course Structure

Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	5	Cognitive	Soil concepts and main soil components	Lecture	Daily and monthly exam, attendance and reports
2	5	Cognitive	Rock weathering / soil formation factors and processes	Lecture	Daily and monthly exam, attendance

					and reports
3	5	Cognitive	Main soil horizons /	Lecture + Field	Daily and
			profile and soil	Visit	monthly exam
			pedoun		attendance
					and reports
4	5	Cognitive	Physical properties of	Lecture +	Daily and
			soil / soil texture	Laboratory	monthly exam,
				_	attendance
					and reports
5	5	Cognitive	Soil construction (soil	Lecture +	Daily and
0	Ũ	5	structure	Laboratory	monthly exam,
					attendance
					and reports
6	5	Cognitive	Soil Water/Water	Lecture +	Daily and
0	5	Cognitive			monthly exam,
			Constants/Physics Classification of Soil	Laboratory	attendance and
					reports
_		C	Water		Doily and
7	5	Cognitive	Bulk and particale	Lecture +	Daily and monthly exam,
			density of soil -	Laboratory	attendance and
			porosity		reports
8	5	Cognitive	Soil color/soil air/soil	Lecture +	Daily and
Ŭ	Ũ	5	temperature	Laboratory	monthly exam,
					attendance and
0		<u> </u>			reports
9	5	Cognitive	Chemical properties	Lecture +	Daily and monthly exam,
			of soil / soil solution	Laboratory	attendance and
			/ degree of soil		reports
			reaction		_
10	5	Cognitive	Cationic exchange	Lecture	Daily and
			capacity/base		monthly exam,
			saturation ratio		attendance and reports
11	5	Cognitive	Soil	Lecture	Daily and
11	S	Cognitive	colloids/absorption	Lecture	monthly exam,
					attendance and
			and adsorption		reports
12	5	Cognitive	Soil salinity and	Lecture +	Daily and
			reclamation of soils	Laboratory	monthly exam,
			affected by salts		attendance and reports
10	5	Cognitive	Soil fertility and plant	Lecture +	Daily and
13	Э	Cognitive	-		monthly exam,
			nutrition	Laboratory	attendance and
					reports
14	5	Cognitive	Organic soil matter	Lecture +	Daily and
	-	-		Laboratory	monthly exam,
					attendance and
1 Г		Comiting	Piological programica		reports Daily and
15	5	Cognitive	Biological properties	Lecture +	monthly exam,
			of the soil	Laboratory	attendance and
					reports

The degree of quarterly pursuit of (40%) distributed (5) degrees for daily preparation, participation and reporting, and (25) degrees of theoretical monthly exams by two monthly exams, and (10) degrees of practical monthly exams by two monthly exams and the final exam score of (60%) distributed (40) degrees for the theoretical part and (20) degrees for the practical part.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Lectures prepared by the teacher based on relevant books and references.
Main references (sources)	Principles of Soil Science - authored by Dr. Abdullah Najm Al-Ani 1980 Al-Bashour, Methods of Soil Analysis of Arid and Semi-Arid Areas, authored by Essam Al-Bashour and Antoine Al-Sayegh.2007.
Recommended books and references (scientific journals, reports)	Iraqi academic scientific journals, including Kirkuk University Journal of Agricultural Sciences
Electronic References, Websites	International magazines within Scopus containers

		(Course Description	Form			
1. Course Name:							
Principles of Statistics							
2. Course Code:							
PRST213							
3. Semester / Year: First semester/second year							
First semester/second year 4. Description Preparation Date:							
4. Description Preparation Date: 31/03/2024							
5. Av	ailable A	Attendance Forms:					
			Mandatory				
6. Nu	mber of	Credit Hours (Tota	l) / Number of Unit	s (Total)			
Theory=(2) Hours & Practical = (3) Hours , Number of units (3)							
		ninistrator's name (
			Email: dr.salahjasir	n@uokirkuk.e	edu.iq		
	ourse Ob				and its types, how to		
as well	as to ana	alyze data statistically		ectly to solve	e statistical problems		
9. Te Explar lecture studen	aching a ation and method t groups.	alyze data statistically nd Learning Strateg l clarification	7	ectly to solve	e statistical problems		
9. Te Expland lecture studen	aching a ation and method	alyze data statistically nd Learning Strateg l clarification	7		e statistical problems		
9. Te Expland lecture studen	aching a ation and method t groups.	alyze data statistically nd Learning Strateg l clarification	7	Learning method	e statistical problems Evaluation method		
9. Te Explan lecture studen 10. Co	aching a ation and method t groups.	alyze data statistically nd Learning Strateg l clarification ructure Required Learning	gies Unit or subject	Learning	-		
9. Te Explar lecture studen 10. Co Week	aching a ation and method t groups. ourse Str Hours	alyze data statistically nd Learning Strateg l clarification ructure Required Learning Outcomes	gies Unit or subject name Introduction to statistics, its definition, and its	Learning method	Evaluation method		
 9. Te Explan lecture studen 10. Co Week	aching a ation and method t groups. ourse Str Hours 5	alyze data statistically nd Learning Strateg l clarification ructure Required Learning Outcomes knowledge	gies Unit or subject name Introduction to statistics, its definition, and its divisions The nature of statistical data and	Learning method lecture	Evaluation method Exam		

5	5	Knowledge & skills	measures of central tendency (arithmetic mean and harmonic mean) for ungrouped data and classified data		lecture	Exam
6	5	Knowledge & skills	measures of central tendency (median, mode) for ungrouped data and classified data		lecture	Exam
7	5	Knowledge & skills	measures of central tendency (geometric mean, square mean) for ungrouped data and classified data		lecture	Exam
8	5	Knowledge & skills	Measures of absolute dispersion (range, mean deviation)		lecture	Exam
9	5	Knowledge & skills	Measures of absolute dispersion (variance, standard deviation)		lecture	Exam
10	5	Knowledge & skills	Measures of relative dispersion: (coefficient of variation)		lecture	Exam
11	5	Knowledge & skills	Torsion measures and oblate measures		lecture	Exam
12	5	Knowledge & skills		esis testing	lecture	Exam
13	5	Knowledge & skills	t dist	ribution	lecture	Exam
14	5	Knowledge & skills		Chi-square distribution		Exam
15	5	Knowledge & skills	Simple regression and correlation		lecture	Exam
		valuation				
particip grade fo	ation, and or the final	submitting reports, (30) exam is (60%).) grades fo			es for daily preparation, monthly exams and the
12.L	earning	and Teaching Resou	rces	Tata 1 d	4- 64 41 41	
Requir	red textbo	ooks (curricular books	s, if any)	Mahmoud A	l-Rawi (1989)	
Main r	reference	s (sources)			-	tive statistics, written b Ahmed Shalabi
Recommended books and references (scientific journals, reports)			Iraqi academic scientific journals			
Electro	onic Refe	erences, Websites		Different 70	sites on the	Internet

Course Description Form							
23.Course Name:							
Principle of Microbiology							
24.C	Course Co	ode:					
			PRMI 214				
25.Se	emester /						
			rst semester/second year	•			
26.Description Preparation Date:							
			03/04/2024				
27.A	vailable	Attendance Forms:					
			Mandatory				
28.N	umber o	· · · · · ·) / Number of Units (Tot	•			
			Hours, Number of units (
			nention all, if more than	· · · · ·			
			im Email: microbiology_	1975@uokirkuk	.edu.iq		
	ourse Ol	0					
			students' knowledge abo				
	and how to distinguish between them practically and culturing with acknowledging how						
characterization laboratory.							
		•					
31. T	eaching a	and Learning Strategi					
31.T Verba	eaching and commu	and Learning Strategi inication with students,	urging them to work tog				
31.T Verba using	eaching al commu written c	and Learning Strategi inication with students, communication skills to	urging them to work togo increase comprehension,	as well as the b	orainstorming		
31.T Verba using metho	eaching a al commu written c od to attra	and Learning Strategi inication with students, communication skills to act students' attention, a	urging them to work togo increase comprehension, activate the thinking strate	as well as the b	orainstorming		
31.T Verba using metho ability	eaching a al commu written c od to attra y, and cor	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to	urging them to work togo increase comprehension, activate the thinking strate	as well as the b	orainstorming		
31.T Verba using metho ability	eaching a al commu written c od to attra	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure	urging them to work togo increase comprehension, activate the thinking strate	as well as the begy according to	orainstorming the student'		
31.T Verba using metho ability	eaching a al commu written c od to attra y, and cor	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning	urging them to work togo increase comprehension, activate the thinking strate	as well as the b egy according to Learning	the student' Evaluatio		
31.To Verba using metho ability 32. C	eaching a al commu written c od to attra y, and cor Course St	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes	urging them to work togo increase comprehension, activate the thinking strate agricultural projects.	as well as the begy according to	Evaluation method		
31.To Verba using metho ability 32. C	eaching a al commu written c od to attra y, and cor Course St	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to	urging them to work togo increase comprehension, activate the thinking strate agricultural projects.	as well as the b egy according to Learning	Evaluation method Daily and		
31.To Verba using metho ability 32. C	eaching a al commu written c od to attra y, and cor Course St	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name	as well as the b egy according to Learning	Evaluation The student' Evaluation method Daily and monthly		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name	as well as the b egy according to Learning method	Evaluation method Daily and monthly exam,		
31.To Verba using metho ability 32. C	eaching a al commu written c od to attra y, and cor Course St	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of	as well as the b egy according to Learning	Evaluatio method Daily and monthly exam, attendance		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name	as well as the b egy according to Learning method	Evaluatio method Daily and monthly exam, attendance		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of	as well as the b egy according to Learning method	Evaluation method Daily and monthly exam, attendance and reports Making quizzes		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology	as well as the b egy according to Learning method	Evaluation method Daily and monthly exam, attendance and reports Making quizzes		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of	as well as the b egy according to Learning method	Evaluation method Daily and monthly exam, attendance and reports Making quizzes - Discussion		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of microorganisms	as well as the b egy according to Learning method	Evaluation Evaluation method Daily and monthly exam, attendance and reports Making quizzes - Discussion Daily and		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours 5	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria - Know the general	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of	as well as the begy according to Learning method lecture	Evaluation Evaluation Method Daily and monthly exam, attendance and reports Making quizzes Discussion Daily and Daily and		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria - Know the general structure of	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of microorganisms Nutritional requirements of	as well as the b egy according to Learning method	Evaluation Evaluation Mathematication Daily and monthly exam, attendance and reports Making quizzes Discussion Daily and monthly exam,		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours 5	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria - Know the general structure of bacteria	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of microorganisms Nutritional requirements of	as well as the begy according to Learning method lecture	Evaluatio method Daily and monthly exam, attendance and reports Making quizzes - Discussion Daily and monthly exam,		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours 5	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria - Know the general structure of bacteria Know the physiology of	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of microorganisms Nutritional requirements of	as well as the begy according to Learning method lecture	Evaluatio Evaluatio Mathematical States Daily and monthly exam, attendance and reports Making quizzes - Discussion Daily and monthly exam, attendance and reports Making quizzes - Discussion		
31.To Verba using metho ability 32. C Veek	eaching a al commu written c od to attra y, and cor Course St Hours 5	and Learning Strategi inication with students, communication skills to act students' attention, a nduct scientific visits to tructure Required Learning Outcomes - Introduction to microbiology - Know general aspect of microbiology Know the important scientists contributed in development of microbiology - How to classifying bacteria - Know the general structure of bacteria	urging them to work togo increase comprehension, activate the thinking strate agricultural projects. Unit or subject name Introduction and the historical development of microbiology The classification of microorganisms Nutritional requirements of	as well as the begy according to Learning method lecture	Evaluation Evaluation Method Daily and monthly exam, attendance and reports Making quizzes Discussion Daily and Daily and		

			-	1	
		Disinfection	control		exam,
			How to use the sterilization		attendance
			techniques for medical equipments		and reports
			equipments		Daily and
					monthly
4	5	Structure of bacteria	knowledge	Lecture.working	exam,
Т	5	components	kilowiedge	in lab as group	attendance
					and reports
					Daily and
			Classification of bacteria	Lecture	monthly
5	5	Classification of	depending on	working in lab	exam,
5	5	bacteria	family,class,order,genus	as group	attendance
			runniy,eiuss,erder,genus	us group	and reports
					Daily and
			Intensive study	Lecture	monthly
6	5	History, Classification	fungi.structure,nutartion	working in lab	exam,
		of fung	,physiology	as group	attendance
		Or rung	,r - , , , , , , , , , , , , , , , , , ,	9- • • h	and reports
					Daily and
		History	Intensive study	Lecture	monthly
7	5	,Classification of	fungi.structure,nutrition	working in lab	exam,
-		yeast	,physiology	as group	attendance
		yeast			and reports
					Daily and
		History	Intensive study	Lecture	monthly
8	5	,Classification of	fungi.structure,nutrition	working in lab	exam,
		algae	,physiology	as group	attendance
		ungue			and reports
			Intensive study		Daily and
		History	fungi.structure,nutrition	Lecture	monthly
9	5	,Classification of	,physiology	working in lab	exam,
		protozoa	classification,Knowledge,	as group	attendance
			skill		and reports
		History	Intensive study fungi.structure,nutrition		Daily and
				Lecture	monthly
10) 5	,Classification of	,physiology,classification	working in lab	exam,
		virus	Knowledge, skill	as group	attendance
					and reports
			_	-	Daily and
	_	Control of	Factores on	Lecture	monthly
11	5	microorganism	microorganism	working in lab	exam,
		meroorganishi	growth,control,prevention	as group	attendance
					and reports
				T /	Daily and
10			Study types of antibiotics	Lecture	monthly
12	2 5	antibiotic	,classification act work	working in lab	exam,
			with site effects on it	as group	attendance
12	> 5	nothegangia	Decase of offect and type	Lastura	and reports
13	8 5	pathogensis	Doses of effect and type	Lecture	Daily and
			72		

			<u> </u>	6 11 .	1 1 1	.1.1
				s for each bacteria and workss	working in lab	monthly
			a	uld workss	as group	exam, attendance
						and reports
14	5	Microorganism in food	microog in food	udy types of gransim with acts and benefits and s advantages	Lecture working in lab as group	Daily and monthly exam, attendance and reports
15	5	Micro in water,air,industraial	Types and classification for each one and works and distribution in enviroments and works		Lecture working in lab as group	Daily and monthly exam, attendance and reports
33.0	Course E	valuation				
	-	articipation, and submit			-	
		s for each exam (15) gra and Teaching Resour			e final exam is (6	0%).
34.L	<i>learning</i>		ces	Lectures preparelevant books	red by the teacher and references.	r based on
34. L	<i>learning</i>	and Teaching Resource	ces	Lectures preparrelevant books Whitman, William B	red by the teacher and references. ; Rainey, Fred; Kämpfer	r based on r, Peter;
34. L	<i>learning</i>	and Teaching Resource	ces	Lectures prepare relevant books Whitman, William B Trujillo, Martha; Chu	red by the teacher and references. ; Rainey, Fred; Kämpfer in, Jonsik; Devos, Paul;	r based on r, Peter; Hedlund,
34. L	<i>learning</i>	and Teaching Resource	ces	Lectures prepare relevant books Whitman, William B Trujillo, Martha; Chu Brian; Dedysh, Sveth	red by the teacher and references. ; Rainey, Fred; Kämpfer in, Jonsik; Devos, Paul; ana (eds.) (2015). <i>Berge</i>	r based on r, Peter; Hedlund, ry's Manual
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Course Description Form
ne:
Soil Ecology And Meteorology
e:
SOEC215
Year:
first semester /second year
Preparation Date:
31/3/2024
ttendance Forms:
Credit Hours (Total) / Number of Units (Total)
Irs for the theoretical part and (3) hours for the practical part, num
ministrator's name (mention all, if more than one name)
eerah Faydhllah MOHAMED
70@uokirkuk.edu.iq
ectives
 Researches the soil environment and atmospheric conditions in ecology, ecosystem and environmental factors It includes the living and non-living components of an ecosystem the soil Temperature, humidity, rain and light Condensation and wind Pollution, desertification and global warming
d Learning Strategies
 Brainstorming Thinking strategy according to the student's ability, for example (if the student is able to learn analysis methods, he will acquire skill in linking knowledge of the soil's chemical and physical properties and fertility. Critical Thinking strategy in learning, which is a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it logically to reach the desired solution.3- Conduct daily and monthly examinations and prepare practical reports

Veek	Hours	Required Learning	Unit or subject	Learning	Evaluation method
		Outcomes	name	method	
1	2+3	The student gets an introduction to ecology and the ecosystem	Environmental science, surrounding factors, and learning about the most important laboratory equipment	Explanation and display of pictures and Lecture	Examination
2	2+3	The student gets to know the types of ecosystems and soil factors	Temperatures and devices for measuring temperature in the air and soil	Explanation and display of pictures and Lecture	Examination
3	2+3	For the student to learn about the importance of biological water and the division of plants according to their need for water, rain, and their effectiveness	Solar radiation and measuring devices	Explanation and display of pictures and Lecture	Examination
4	2+3	The student gets to now condensation and frost	Humidity and devices for measuring it in the air and soil	Explanation and display of pictures and Lecture	Examination
5	2+3	The student gets to know the temperature and thermal range of plants and the effect of heat stress	Precipitation, rain and dew measuring devices	Explanation and display of pictures and Lecture	Examination
6	Examina tion	The student will be familiar with the nature of thermal stress, the effect of heat on vegetation, thermal synchrony, and ambient temperature	Wind, devices for measuring wind speed and direction	Explanation and display of pictures and Lecture	Examination
7	2+3	The student gets to know light and the biological effects of light	Atmospheric pressure and measuring devices	Explanation and display of pictures and Lecture	Examination
8	2+3	The student gets to now the point of photocompensation and the effect of light on the shape	Evaporation and evaporation measuring devices	Explanation and display of pictures and Lecture	Examination

9	2+3	and structure of plants The student will be familiar	Soil, devices for	Explanation and	Examination
У	2+3	with humidity and the	measuring soil	display of	
		decrease in the degree of	characteristics, salinity,	pictures and Lecture	
		saturation	degree of reaction, soil	Lecture	
			components and particle		
			sizes		
10	2+3	The student will learn about	Natural plant	Explanation and	Examination
10	4.0	the effect of humidity on	environments in the	display of	
		plants	world and Iraq, alpine	pictures and Lecture	
			environments, steppes,	Lociure	
			savannas, grasses, and		
			tundra.		
11	2+3	The student will learn about	Desert cover in the	Explanation and	Examination
		winds, their types, and	world and Iraq	display of pictures and	
		their harm and benefits to		Lecture	
		plants			
		The student gets to know	The aquatic ecosystem	Explanation and	Examination
12	2+3	the most important	on Earth, aquatic and	display of	EXammuter
		contemporary	halophytic plants	pictures and	
		environmental issues		Lecture	
13	2+3	The student will be familiar	Forest vegetation in the	Explanation and	Examination
15	2.5	with pollution and its	world and Iraq – climate	display of	
		interrelated effects	charts and their	pictures and Lecture	
			vocabulary, and a field	Lecture	
			experiment		
		The student will be familiar		Explanation and	Examination
14	2+3		A visit to a weather station	display of	EXamination
		with the phenomenon of inverted gradient and	Station	pictures and	
		global warming		Lecture	
15	2+3	The student gets to know		+	
15	273	desertification, its types	the exam		
		and causes			
11.Co	ourse Eva	aluation		· ·	
Da	aily and r	monthly tests			
Pa	articipate	by asking questions that a	are models of scientific	discussions relate	d to the academ
	ubject	, , , , , , , , , , , , , , , , , , , ,			
00	-	ns activities through new w			

		Cou	rse Description	Form	
1. 0	Course N	lame:			
		Principle	s of Agricultura	l Extensior	1
2. Cou	urse Co	de:			
2.0		x 7	AGEX216		
3. Sen	nester /			. J	
1 Dec	amintia		semester/secon	id year	
4. Des	scription	n Preparation Date:	28/03/2024		
5. Av	ailable /	Attendance Forms:	20/03/2024		
		rttendance i of m5.	Mandatory		
6. Nw	mber of	Credit Hours (Total) / 2	2	ts (Total)	
			ours, Number of	· · · · ·	
7. Cou	urse adı	ninistrator's name (mer			name)
Nar	me: Prof	f. Dr. khattab Abdullah N	Iohammed Ema	il: <u>khattab1</u>	981@uokirkuk.edu.iq
8. Cou	urse Ob	jectives			
The cou	urse aim	s to raise the level of stu	dents' knowledg	ge about agr	ricultural extension and
	-	problems facing farmers		-	-
		on their farms by emplo	ying rural leade	rs in extensi	on work.
		nd Learning Strategies			
		nication with students, urg		-	
-		communication skills		-	
	•	nethod to attract students			0 00
		ability, and conduct scien	ntific visits to ag	ricultural pi	ojects.
10. CO	ourse Sti		Unit or	Looming	
Week	Hours	Required Learning	Unit or	Learning	
		Outcomes	subject name	method	Evaluation method
1	0	Outcomes Definition of	subject name	method	
	2	Definition of	subject name	method lecture	Evaluation method Daily and monthly exam, attendance and reports
		Definition of agricultural extension	knowledge	lecture	Daily and monthly exam, attendance and reports
2	2	Definition of agricultural extension The importance of			Daily and monthly exam,
2		Definition of agricultural extension	knowledge	lecture	Daily and monthly exam, attendance and reports Daily and monthly exam,
	2	Definition of agricultural extension The importance of agricultural extension	knowledge knowledge	lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam,
2		Definition of agricultural extension The importance of agricultural extension The interconnection	knowledge	lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports
	2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension,	knowledge knowledge	lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam,
3	2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research	knowledge knowledge knowledge Knowledge,	lecture lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports
	2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research Agricultural extension	knowledge knowledge knowledge Knowledge, skills and	lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam,
3	2 2 2 2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research Agricultural extension philosophy	knowledge knowledge knowledge Knowledge,	lecture lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports
3	2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research Agricultural extension philosophy Principles of	knowledge knowledge knowledge Knowledge, skills and	lecture lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam,
3 4 5	2 2 2 2 2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research Agricultural extension philosophy Principles of agricultural extension	knowledge knowledge knowledge Knowledge, skills and attitudes knowledge	lecture lecture lecture lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports
3	2 2 2 2	Definition of agricultural extension The importance of agricultural extension The interconnection between extension, education and agricultural research Agricultural extension philosophy Principles of	knowledge knowledge knowledge Knowledge, skills and attitudes	lecture lecture lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam,

	1	1	1		1	
			a	ttitude		
7	2	Extensional management	kne	owledge	lecture	Daily and monthly exam, attendance and reports
8	2	Leadership in agricultural extension	kno	owledge	lecture	Daily and monthly exam, attendance and reports
9	2	Rural leadership	Kno	owledge, skill	lecture	Daily and monthly exam, attendance and reports
10	2	Extensional communication	Kno	owledge, skill	lecture	Daily and monthly exam, attendance and reports
11	2	The process of diffusion and adoption of innovations	Kne	owledge, skill	lecture	Daily and monthly exam, attendance and reports
12	2	The decision-making process related to innovations	Kne	owledge, skill	lecture	Daily and monthly exam, attendance and reports
13	2	Methods and means of agricultural extension	Kne	owledge, skill	lecture	Daily and monthly exam, attendance and reports
14	2	Planning agricultural extension programs	Kne	owledge, skill	lecture	Daily and monthly exam, attendance and reports
15	2	Electronic agricultural extension	Kne	owledge, skill	lecture	Daily and monthly exam, attendance and reports
The gr prepara monthl	rade for ation, par y exams	valuation the semester examination rticipation, and submitting for each exam (15) grade	g repo	orts, (30) g	rades for mo	onthly exams, with two
		and Teaching Resources		Lectures prepared by the teacher based on relevant books and references.		
Main r	eference	s (sources)		Principles of agricultural extension, written b Dr. Abdullah Al-Samarrai		
		books and references nals, reports)		Iraqi academic scientific journals, including Kirkuk University Journal of Agricultural Sciences		
Floatro	nic Refe	erences, Websites		Internati	onal journa	ls included in Scopus

1 4	Course		escription	rorm	
1.	Course N	vanne:			
		Computer A	pplication	s/3	
2. Co	urse Co	de:			
			COAP217		
3. Set	mester /				
4 5	• .•		ster/ secon	d year	
4. De	scription	n Preparation Date:	0/02/2024		
5 4	allahla d		8/03/2024		
5. AV	allable A	Attendance Forms:	Indatory		
6 Nu	mbor of	Credit Hours (Total) / Num	landatory	ta (Totol)	
U. INU		(3) Hours, 1		. ,	
7. Co	urse adı	ninistrator's name (mention		· · /	name)
		st Prof. Basira Abdullah Ahm			
	urse Ob			- as er auto a di	
		loping the student's abiliti	es to mas	ter makin	g tables and writing
		ematical equations via the c			
		· ····································	I		
9. Te	aching a	nd Learning Strategies			
			them to wo	rk together	in the learning process
Verbal	commu	nd Learning Strategies nication with students, urging communication skills to			
Verbal using brainst	commur written orming r	ication with students, urging communication skills to nethod to attract students' atte	increase c	comprehensi	ion, as well as the
Verbal using brainst to the s	commur written orming r student's	ication with students, urging to communication skills to nethod to attract students' atterability.	increase c	comprehensi	ion, as well as the
Verbal using brainst to the s	commur written orming r	ication with students, urging to communication skills to nethod to attract students' atterability.	increase c ntion, activ	comprehension at the thin the	ion, as well as the
Verbal using brainst to the s 10. Co	commur written orming r student's ourse St	nication with students, urging to communication skills to nethod to attract students' atter ability.	increase c ntion, activ	comprehensi	ion, as well as the king strategy according
Verbal using brainst to the s 10. Co	commur written orming r student's	nication with students, urging to communication skills to nethod to attract students' atte ability. cucture Required Learning	increase c ntion, activ Unit or subject	comprehension thate the thin Learnin g	ion, as well as the
Verbal using brainst to the s 10. Co	commur written orming r student's ourse St	nication with students, urging to communication skills to nethod to attract students' atter ability.	increase c ntion, activ	comprehension thate the thin Learnin	ion, as well as the king strategy according
Verbal using brainst to the s 10. Co	commur written orming r student's ourse St	nication with students, urging to communication skills to nethod to attract students' atte ability. cucture Required Learning Outcomes	increase c ntion, activ Unit or subject	comprehension trate the thin Learnin g	ion, as well as the king strategy according
Verbal using brainst to the s 10. Co	commur written orming r student's ourse St	nication with students, urging to communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes Run Microsoft Word -	increase c ntion, activ Unit or subject	comprehension trate the thin Learnin g	ion, as well as the king strategy according
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Verbal using brainst to the s 10. Co	commur written orming r student's ourse St	nication with students, urging to communication skills to nethod to attract students' atte ability. cucture Required Learning Outcomes Run Microsoft Word - open a new document - save the working page -	increase c ntion, activ Unit or subject name	comprehension trate the thin Learnin g	ion, as well as the king strategy according Evaluation method
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Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored	increase c ntion, activ Unit or subject name Knowled	comprehension vate the thin Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atter ability. ructure Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file	increase c ntion, activ Unit or subject name Knowled	comprehension vate the thin Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	ication with students, urging to communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file Inverting the language	increase c ntion, activ Unit or subject name Knowled	comprehension vate the thin Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atter ability. Tucture Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file Inverting the language between Latin and Arabic	increase c ntion, activ Unit or subject name Knowled ge	Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam attendance and reports
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atter ability. Tucture Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file Inverting the language between Latin and Arabic - preparing an Arabic and	increase c ntion, activ Unit or subject name Knowled ge	comprehension vate the thin Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly examattendance and reports Daily and monthly examated
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atter ability. ructure Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file Inverting the language between Latin and Arabic - preparing an Arabic and Latin paragraph - preview	increase c ntion, activ Unit or subject name Knowled ge	Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly exam,
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging to communication skills to nethod to attract students' atter ability. Tucture Required Learning Outcomes Run Microsoft Word - open a new document - save the working page - make a backup copy - close a file - open a stored file Inverting the language between Latin and Arabic - preparing an Arabic and	increase c ntion, activ Unit or subject name Knowled ge	Learnin g method	ion, as well as the king strategy according Evaluation method Daily and monthly examattendance and reports Daily and monthly examated

-						
			the text - font and size -			
			underlining - changing			
			letter case			
		3	Moving and copying			
			information - Word			
			clipboard - Search and			
			replace - Numbers and	T 7 1 1		
	3		bullets - Spell checker -	Knowled	lecture	Daily and monthly exam, attendance and reports
			Undo - Reverse undo -	ge		attendance and reports
			Page setup - Page margins			
			- Text alignment - Line			
			spacing			
		3	Inserting a table -			
			Inserting rows and			
			columns - Selecting the	Knowled		
	4		row/column - Selecting	ge, skills and	lecture	Daily and monthly exam, attendance and reports
			the table - Adding borders	attitudes		attendance and reports
			and deleting cells -			
			Shading the frame			
		3	Merge and split cells -			
			Split the table - Change the			
	5		height and width of cells -	knowled	lecture	Daily and monthly exam,
	5		Auto fit - Repeat the table	ge	lecture	attendance and reports
			title - Header and footer -			
			Sorting text			
		3	Page numbering - writing			
			code - toolbar - drawing -	Vacualed		
			deleting drawing shapes -	Knowled ge, skill		Daily and monthly exam,
	6		filling - drawing line color	and	lecture	attendance and reports
			- inserting, editing,	attitude		
			deleting and moving the			
-		2	image			
		3	Microsoft Excel: Run it -			
	7		Excel worksheet - Enter	knowled	1 .	Daily and monthly exam,
	7		data - Save the file - Print	ge	lecture	attendance and reports
			the worksheet - Exit the			
-		2	program			
	8	3	Practical exam	knowled	lecture	Daily and monthly exam,
-		3	Colocting colla	ge		attendance and reports
	9	3	Selecting cells -	Knowled	lecture	Daily and monthly exam,
	フ		types of data - using mathematical	ge, skill	lectule	attendance and reports
			inathematical	80		
				00		

		formulas to select data - relative and absolute addresses - formulas that produce error values - moving cells - copying data Move or copy a worksheet and replace - move to a cell - delete cells - erase/insert a row or column			
10	3	Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines - How to search for information on the network - Using the search button in the toolbar -	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
11	3	Modify the height of a row or column - show and hide the row or column	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
12	3	Rename the worksheet - font type, size and style	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
13	3	Shape numbers - align data - add borders	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
14	3	Fill cells - sort data - create a chart	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
15	3	Edit Created Layout - Header/Footer Insert and remove a page break	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports

11.Course Evaluation

The grade for the semester examination is (40%), divided into (10) grades for daily preparation, participation, and submitting reports, (30) grades for monthly exams, with two monthly exams for each exam (15) grades, and the grade for the final exam is (60%).

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Lectures prepared by the teacher based on
Required textbooks (curricular books, if any)	relevant books and references.
	Computer basics and office applications (Part
Main references (sources)	second) / Ziad Muhammad Aboudi, Ghassan
	Hamid Abdel Majeed, Mustafa Diaa Al-Hass
Recommended books and references	Iraqi academic scientific journals, including
(scientific journals, reports)	fraqi acadenne scientine journais, meruding
Electronic References, Websites	International journals.

English language2 36. Course Code: ENLA218 37. Semester / Year: 1 st semester / Second year 38. Description Preparation Date: 31/3/2024 39.Available Attendance Forms: Classroom attendant 40.Number of Credit Hours (Total) / Number of Units (Total) 1 41.Course administrator's name (mention all, if more than one name) Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq 42. Course Objectives Course Objectives Course Objectives Introducing students to a wide range of important and practical vocabulary in m situations, which will help them expand their vocabulary and improve their ability communicate in English. Additionally, it offers a thorough explanation of fundame language rules such tenses, sentence forms, and grammatical structures, help students to comprehend sentence construction and proper language usage. Along v offering a variety of engaging texts at varying degrees of difficulty, this aids in development of students' comprehension of spoken and written English. 43. Teaching and Learning Strategies Strategy instructional activities and lessons.	35.	Course Name:
ENLA218 37. Semester / Year: 1** semester / Second year 38. Description Preparation Date: 31/3/2024 39.Available Attendance Forms: Classroom attendant 40.Number of Credit Hours (Total) / Number of Units (Total) 1 41. Course administrator's name (mention all, if more than one name) Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq 42. Course Objectives Course Objectives Course Objectives Introducing students to a wide range of important and practical vocabulary in m objectives Introducing students to a wide range of important and practical vocabulary in m objectives Introducing students to a wide range of important and practical vocabulary in m objectives Course Objectives Introducing students to a wide range of important and practical vocabulary in m objectives Strategy Introducing students econstruction and proper language usage. Along v		English language2
37. Semester / Year:	36.	Course Code:
1st semester / Second year 38. Description Preparation Date: 31/3/2024 39.Available Attendance Forms: Classroom attendant 40.Number of Credit Hours (Total) / Number of Units (Total) 1 41. Course administrator's name (mention all, if more than one name) Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq 42. Course Objectives Course Introducing students to a wide range of important and practical vocabulary in m situations, which will help them expand their vocabulary and improve their ability communicate in English. Additionally, it offers a thorough explanation of fundame language rules such tenses, sentence forms, and grammatical structures, help students to comprehend sentence construction and proper language usage. Along v offering a variety of engaging texts at varying degrees of difficulty, this aids in development of students' comprehension of spoken and written English. 43. Teaching and Learning Strategies Strategy • incorporating all four language skills—speaking, listening, reading, and writing—i instructional activities and lessons. • Teach vocabulary and grammar with real-world examples and settings. • Continuous evaluations and fast feedback are needed to track and direct students development. • assisting students in developing the abilities of self-learning, goal-setting, and self-evaluation • utilizing websites, multimedia, and language applications as examples of mod		ENLA218
38. Description Preparation Date: 31/3/2024 39.Available Attendance Forms: Classroom attendant 40.Number of Credit Hours (Total) / Number of Units (Total) 1 41. Course administrator's name (mention all, if more than one name) Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq 42. Course Objectives Course Introducing students to a wide range of important and practical vocabulary in m objectives Situations, which will help them expand their vocabulary and improve their ability communicate in English. Additionally, it offers a thorough explanation of fundame language rules such tenses, sentence forms, and grammatical structures, help students to comprehend sentence construction and proper language usage. Along v offering a variety of engaging texts at varying degrees of difficulty, this aids in development of students' comprehension of spoken and written English. 43. Teaching and Learning Strategies Strategy • incorporating all four language skills—speaking, listening, reading, and writing—i instructional activities and lessons. • Teach vocabulary and grammar with real-world examples and settings. • Continuous evaluations and fast feedback are needed to track and direct students development. • assisting students in developing the abilities of self-learning, goal-setting, and self-evaluation • utilizing websites, multimedia, and language applications as examples of mod	37.	Semester / Year:
31/3/2024 31/3/2024 39.Available Attendance Forms: Classroom attendant 40.Number of Credit Hours (Total) / Number of Units (Total) 1 1 41. Course administrator's name (mention all, if more than one name) Name: Susan Ibrahim Hassan Email: susanih@uokirkuk.edu.iq 42. Course Objectives		

Veek	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	1	Learning these language structures helps learners prepare for real communication in various every day and professional situations.	Verb to be (am, is, are) Passive adjective	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
2	1		Verb to be Questions, Negatives and short answers Possessive (s)	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
3	1	makes it easy for Students to construct simple sentences, which aids in the accurate and unmistakable expression of fundamental facts and information with (1 He, she, it)	present simple 1 He, she, it questions, and negatives	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
4	1	To familiarize students with the difference in using the plural subject in the simple present tense	Present simple 2 I you, we they	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
5	1	Providing students with these terms and expressions helps them communicate more effectively and self- assuredly in the English language while also enhancing their speaking, listening, reading, and writing	There is/ there are How many? Prepositions of place Some and any This, that, this, those	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks

		abilities.			
6	1	Aid in the exact and varied expression of a broad range of ideas and thoughts, modal auxiliary verbs enrich the English language.	Can can't Was were Could Was born	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
7	1		Exam		
8	1	Help to describe past experiences and events i using the simple past tense. Teaching roles for adding (ed) and kinds of irregular verbs.	Past simple1 Regular verbs Regular verbs Time expressions	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
9	1	It enables students to comprehend the negative uses of the simple past tense. The ability to distinguish between countable and uncountable exists in the pupil. Discover the distinction between asking for something and making an offer.	Past simple 2 Negatives and ago, Time expressions Count and count nouns, Do you like? would you like?	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
10	1	Improve ability to accurately express quantities. Gain skill in using comparative and superlative adjectives. Improve ability to take possession of things and to express it.	a and some Much and Many Comparative and superlative Have got	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
11	1	help students learn how to use the present continuous tense to describe events being carried out at the present time.	Present continuous Who is it? Possessive pronoun	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
12	1	By using the infinitive, students can express	Going to Infinitive of purpose	Giving students the chance to	Students reading and

		about goals and objectives. Develop questioning to communicate more effectively.	Questions forms Adverbs and adjective	communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	answering questions. Quiz and HomeWorks
13	1	Students may express just finished events that are related to the present by studying this tense.	Present perfect Ever, and never	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
14	1	Make student Know difference between Yet and Just And the difference between Present, perfect and past simple	Yet and just Present, perfect and past simple	Giving students the chance to communicate and engage. Utilizing data shows. Play audio files or show video clips to help with pronunciation.	Students reading and answering questions. Quiz and HomeWorks
15	1		Exam		
45. 0	Course E	Evaluation			
Daily E: (60%)	xam, Par	ticipation and Attend	ance (5%) + Monthl	y Exam (35%) +	- Final Exam
46. L	earning	and Teaching Reso	urces		
Require	ed textbo	oks (curricular books, i	if ar New Headway	Plus Elementary John Soars	by Liz And
	Main re	eferences (sources)	English File seri	es by Clive Oxend Latham-Koenig	en and Christ
		books and references	"English Gra	mmar in Use" by l	Raymond
		ournals, reports)		Murphy	d com)
E	hectronic	References, Websites		(<u>https://www.te</u> tps://www.bbc.ce	-

1 Course New					
1. Course Nam	crimes of the Baath regime in Iraq				
2 Course Cod					
2. Course Code	CRBA219				
2 Composton /					
3. Semester /	First semester / second year				
1 Description	Preparation Date:				
	<u> </u>				
7 A 111 A	31\3\2024				
	ttendance Forms:				
Mandatory	Credit Hours (Total) / Number of Units (Total)				
2 hours / 2					
/	ninistrator's name (mention all, if more than one name)				
	atool Ibrahim Abdulrahman				
Email: batooli	brahim@uokirkuk.edu.iq				
8. Course Obje	ectives				
Course Objectives	The course aims to introduce the student to the crimes				
	committed by the Baath regime and the punishments.				
	The decisions issued against the perpetrators of crimes, the types of				
	international crimes and their impact on the citizen.				
	. And mass graves.				
9. Teaching an	d Learning Strategies				
Strategy	To make the learner able to know the types of international crimes and their impact on the people from a psychological, social and religious perspective and the punishments issued against the perpetrators of such crimes, as well as to know the oppression, abuse, murder and intimidation committed by the previous regime against Iraqi society.				

Neek	Hours	Required	Unit or subject name	Learning	Evaluation	
		Learning		method	method	
		Outcomes				
1	2	Learn about the concept of crimes and their categories	Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law in	Lecture and discussio	Oral examination and essay	
2	2	Identify the types of international crimes	2005 Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law in 2005		=	
3	2	Learn about the decisions issued by Supreme Criminal Court	Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law in 2005	=	=	
4	2	Identify the mechanisms of psychological crimes.	Psychological and social crimes and their effects	ological and social =		
5	2	Identify the effects of psychological crimes	Psychological and social crimes and their effects	=	=	
6	2	Identify social crimes	Psychological and social crimes and their effects	=	=	
7	2	Identify violations of Iraqi laws. And learning about places of prisons detention of the Baath regime.	Psychological and social crimes and their effects			
8	2	exam				
٩	2	Identifying military and radioactive contamination and mine explosions	Environmental crimes of Baath regime in Iraq	=	=	
10	2	Recognizing the destruction of cities and villages (scorched earth policy)	Environmental crimes of Baath regime in Iraq	=	=	
11	2	Learn about draining marshes razing palm groves, trees and crops	Environmental crimes of Baath regime in Iraq	=	=	
12	2	exam				
13	2	Identifying mass Graves	Mass grave crimes	=	=	

14	2	Identification of genocide graves related to the Iran-Iraq War of 1980- 1988 AD	Mass grave crimes	=	=	
15	2	Identifying the genocidal graves of victims of the 1991 Shaabaniya uprising	Mass grave crimes	=	=	
11. Co	urse Evalu	ation				
participati	on, (30) m		ibuted (10) grades f two monthly exams f			
	Ŭ	Teaching Resource	ces			
Required te	extbooks (cu	ırricular books, if any	The crimes of the Ba	The crimes of the Baath regime in Iraq		
Main references (sources)			International respon crime of genocide - T swamps in southern	he geography of Iraq – Environm	the marshes and	
			crimes of the Baath , a people under the	· ·		
Recommen (scientific jo	ided boo ournals, repo		, a people under the	· ·		

Course Description Form					
1.	Course Na	ime:			
		Soil, v	vater and plant a	nalysis	
2.	Course Co	de:			
			SOPL221		
3.	Semester	1	-	_	
4			nd semester /secon	d year	
4.	Descriptio	on Preparation Date			
			31/3/2024		
		Attendance Forms:			
	Is mandat	ory f Credit Hours (Tota	1) / Number of Unit	re (Total)	
			· · · · · · · · · · · · · · · · · · ·	· · · · ·	practical part, numb
of unit		suis ior die dieore	lical part and (0) I	iours for the	practical part, name
		dministrator's nam	e (mention all, if n	nore than on	e name)
		neerah Faydhllah N			
		l_70@uokirkuk.edu	ı.iq		
8.	Course Ob				
Course	Objectives	 The student is introdu Review some basic co Introducing the student The use of X-rays in the student 	by to take soil, water and liced to basic analysis mer concepts in the field of qua nt to methods of mechani the field of mineral and q e and stable isotopes in th	thods antitative analysis ical analysis of ele uantitative analys	ements is
9.	Teaching a	and Learning Strate	gies		
 Brainstorming Thinking strategy according to the student's ability, for example (if the student is able to learn analysis methods, he will acquire skill in linking knowledge of the soil's chemical and physical properties and fertility. Critical Thinking strategy in learning, which is a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it logically to reach the desired solution.3- Conduct daily and monthly examinations and prepare practical reports 					knowledge of the soil's symbolizes the highest lyze it logically to reach
10. Co	ourse Stru	cture			
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation method
		Outcomes	name	method	
1	2+3	Introduction to soil, water and plant analysis. s	Taking soil samples and preparing them for examination analysi	Explanation and display of pictures and Lecture	Examination
			90]

		Obtaining samples,	taking plant samples	Explanation and display of	Examination
2	2+3		and testing water samples	pictures and Lecture	
3	2+3	Reviewing some basic concepts in the field of quantitative analysis,	calculating and preparing standard solutions for the exam	Explanation and display of pictures and Lecture	Examination
4	2+3	Processing the results and verifying the accuracy of the analyses	. Preparing extracts and measuring the pH and EC test	Explanation and display of pictures and Lecture	Examination
5	2+3	Gravimetric analysis methods	, estimation of exchange images and exchange capacity of positive ions, CEC exam	Explanation and display of pictures and Lecture	Examination
6	Examination	Volumetric analysis methods	for estimating the level of organic carbon.	Explanation and display of pictures and Lecture	Examination
7	2+3	Electrolysis methods	for determining ready- made nitrogen and ready-made potassium, explanation and display of pictures	Explanation and display of pictures and Lecture	Examination
8	2+3	Electrolysis methods	such as ready-made nitrogen and potassium	Explanation and display of pictures and Lecture	Examination
9	2+3	Analysis methods based on spectrometry	estimation of ready- made phosphorus	Explanation and display of pictures and Lecture	Examination
10	2+3	Analysis methods based on atomic absorption spectrometry.	Estimation of the total soil content of elements	Explanation and display of pictures and Lecture	Examination
11	2+3	Analysis methods based on atomic emission spectrometry.	Mineral analysis using an X-Ray device	Explanation and display of pictures and Lecture	Examination
12	2+3	The use of X-rays in the field of mineral analysis and quantitative	determination of the redox potential of soil	Explanation and display of pictures and Lecture	Examination
13	2+3	The use of radioactive and stable isotopes in the field of quantitative analysis of elements,	digesting plant samples and determining their element content	Explanation and display of pictures and Lecture	Examination
14	2+3	The use of radioactive and stable isotopes in the field of quantitative analysis of elements,	digesting plant samples and determining their element content	Explanation and display of pictures and Lecture	Examination
15		Examination	Examination	Examination	Examination
	ourse Evalua				

Participate by asking questions that are models of scientific discussions related to the academic subject

Submissions activities through new work and scientific reports

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	طرائق تحليل التربة و النبات و المياه و الأسمدة ، دكتور محدد منهل ۔ الزعبي ، الدكتور أنس المصطفى الحصني و الدكتور حسان درغام
Main references (sources)	 G.D. Christian, 1980. Analyt chemistry. John Wiley & Sons. Inc. N.T. Faithfull, 2002. Methods Agricultural chemical analyisi. A pract HandBook. CABI publishing. Soil Survey Laboratory method man 2004. Soil survey Investigation report. No. version 4.0, USDA.
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern عصام بشورو د. انطوان الصايغ، ۲۰۰۷. طرق تحليل تربة المناطق - الجافة وشبه الجافة. الجامعة الامريكية، بيروت.
Electronic References, Websites	Iraqi academic journals, Research gate, US

Course Description Form
1. Course Name:
Principles of Plant Protection
2. Course Code:
PRPL222
3. Semester / Year:
Second semester/second year
4. Description Preparation Date:
29/03/2024
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
(5) Hours, Number of units (3)
7. Course administrator's name (mention all, if more than one name)
Name:MOHAMMED ALBAYATI E-mail <u>albayatiiu@uokirkuk.edu.iq</u>
8. Course Objectives
The course aims to familiarize itself with the science of plant protection and the most
important methods of combating it
9. Teaching and Learning Strategies
Verbal communication with students and motivation for teamwork in the learning process

Verbal communication with students and motivation for teamwork in the learning process and use of communication skills...

10. Course Structure							
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method		
1	5	Introduction to the science	Introduction to the science of prevention of plants from insects	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports		
2	5	Insect feeding methods	Insect feeding methods and factors that helped its survival	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports		
3	5	reproductive methods	Insect reproductive methods	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports		
4	5	resistance	Insects	Lecture,	Verbal, editorial,		

			resistance	presentations	daily and monthly
				and interactive discussion	tests and scientific reports
5	5	Economic and important	Economic and important factors in Iraq	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
6	5	ferrets	Ferrets damage	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
7	5	First Examination		Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
8	5	Pests	Economic importance for Pests	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
9	5	Definitions terms	Definitions of phytosanitary terms	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
10	5	Pathogens of parasitic	Pathogens of parasitic plants	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
11	5	Non-parasitic pathogens	Non-parasitic pathogens	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
12	5	Methods of spreading	Methods of spreading plant diseases	Lecture, presentations and interactive	Verbal, editorial, daily and monthly tests and scientific reports
			94		

					discussion	
13	5	Methods of resistance	resista	thods of ance plant seases	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
14	5	biological control	biolog	ical control	Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
15	5	Final Examination	Final Examination		Lecture, presentations and interactive discussion	Verbal, editorial, daily and monthly tests and scientific reports
11.C	ourse Ev	aluation				
The g	rade for	the semester examination	ation i	s (40%),	divided into (10) grades for daily
prepara	ation, par	rticipation, and submitt	ing rep	oorts, (30)) grades for mon	thly exams, with two
monthl	ly exams	for each exam (15) gra	ides, a	nd the gra	de for the final e	exam is (60%).
12.Le	earning a	and Teaching Resourc	ces			
Requir	Required textbooks (curricular books, if any			Lectures prepared by the teacher based on relevant books and references.		
Main r	Main references (sources)			Plant Dis Plant Ent	sease tomology	
Recom	mended	books and references				
(scient	ific jourr	als, reports)				
		rences, Websites		Internat	tional journals in	cluded in Scopus

1. Course Nar	ne:
	Farm machinery and equipment
2. Course Cod	le:
	FAMA223
3. Semester /	Year:
	second semester /second year
4. Description	n Preparation Date:
	31/3/2024
5. Available A	Attendance Forms:
Is mandato	ory
6. Number of	Credit Hours (Total) / Number of Units (Total)
(5) hours, (2) ho number of units	ours for the theoretical part and (3) hours for the practical pa
	ministrator's name (mention all, if more than one name)
	-NIHAYAT HUSSEIN AMEEN
Email: mna	as_int@uokirkuk.edu.iq
8. Course Obj	ectives
Course Objectives	Introducing, qualifying and training students theoretically and practically: 1- Introducing a student to general concepts and definitions in agricultural machinery and equipment and motivating him with deductive skills 2- Introducing the student to arithmetic problems 3- Identify the problem or obstacle and know how to find the appropriate solution
9. Teaching a	nd Learning Strategies
Strategy	 1- Identifying the components and parts of agricultural machines, identifying the engine parts, devices and systems associated with them, and how to create productivity and energy and shifting towards more mechanical harvesting technology for these machines, as well as managing, exploiting and using machines and machines in the agricultural field in a scientific and technical correct manner. 2- Presenting questions about the topic to demonstrate students' understanding through their answers
	3- Conduct daily and monthly examinations and prepare practical reports

Veek	Hours	Required	Unit or subject name	Learning	Evaluation
		Learning		method	method
		Outcomes			
		Lectures +	A historical overview of the	Lectures +	Daily questions + tests
		exercises and	science of machinery and	teaching-	+ tests
		practical	agricultural machinery + viewing	learning aids	
1	2+3	observations	the types of tractors and a		
			general understanding of its		
			components and general		
			specifications.		
		Lectures +	Basics of agricultural machinery	Lectures +	Daily questions + tests
		exercises and	and equipment classification	teaching-	T tests
2	2+3	practical	+ identifying and viewing engine	learning aids	
		observations	parts and how they work		
			(operation and maintenance)		
		Lectures +	Parts of the engine and the	Lectures +	Daily questions + tests
		exercises and	functions of its parts and learning	teaching-	1 10515
•		practical	about the types of combustion	learning aids	
3	2+3	observations	engines (examples of types of		
			engines) + learning about the		
			parts of devices and systems and		
			their maintenance		Daily questions
		Lectures + exercises and	Two- and four-stroke spark and	Lectures + teaching-	+ tests
4	2+3	practical	diesel engines course + showing films about strokes and strokes	learning aids	
		observations	and practical observations	learning alus	
		Lectures +		Lectures +	Daily questions
		exercises and	Power transmission devices +	teaching-	+ tests
5	2+3	practical	mathematical applications	learning aids	
		observations			
6	Examination	Examination	Examination	Examination	Examination
-		Lectures +	Lubrication and cooling systems	Lectures +	Daily questions
		exercises and	in engines + watching timing	teaching-	+ tests
		practical	devices, how they operate and	learning aids	
		observations	maintain them		
7	2+3		View and maintain air and water		
			cooling devices		
			Watch the lubrication devices,		
			types of filters, and how to install		
			and clean them		
		Lectures +		Lectures +	Daily questions
8	2+3	exercises and	Practice driving a tug and	teaching-	+ tests
2		practical	attaching machinery to the tug	learning aids	

		observations Lectures +	Fuel devices: diesel and gasoline	Lectures +	Daily questions
		exercises and	-	teaching-	+ tests
9	2+3	practical	/ spark ignition devices + view fuel devices: gasoline and diesel	learning aids	
		observations	view spark ignition devices	learning alus	
		Lectures +	ransmission devices: clutch –	Lectures +	Daily questions
		exercises and			+ tests
			gearbox – differential And the methods used when	teaching-	
		practical observations		learning aids	
		observations	transferring and converting		
10	2.2		movement in agricultural		
10	2+3		machinery and equipment +		
			viewing the transmission devices		
			Watch the hydraulic devices, the		
			power take-off shaft, and how to		
			connect the equipment to the		
			hydraulic device in the tug		Doily quastions
		Lectures +	Hydraulic devices and power	Lectures +	Daily questions + tests
		exercises and	take-off shaft + see the types of	teaching-	
		practical	plows and learn about them and	learning aids	
11	2+3	observations	how they operate and maintain		
			them		
			See the types of softeners and		
			learn about them and how they		
			work		
		Lectures +	Soil tillage equipment	Lectures +	Daily questions + tests
12	2+3	exercises and	Soil softening equipment +	teaching-	1 6565
		practical	viewing the types of seeds and	learning aids	
		observations	how they work		Dilassi
		Lectures +	Leveling equipment	Lectures +	Daily questions + tests
13	2+3	exercises and	Grain seeding and agricultural	teaching-	
		practical	equipment + view types of animal	learning aids	
		observations	and chemical fertilizer spreaders		Deile en etiene
		A field visit to	Chemical and animal manure	Lectures +	Daily questions + tests
		the fields	spreading equipment	teaching-	
14	2+3		(Spraying and fogging equipment)	learning aids	
			+ conducting a study on		
			industrial safety (use of machines		
1 7		Examination	and equipment)	Examination	Examination
15			Examination		
11.Co	ourse Evalu	auon			
Da	aily and mo	nthly tests			

academic subject

Submissions activities through new work and scientific reports

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	. Agricultural machines and machines - 628th edition, Yassin Hashim Al-Tahan, Muhammad Jassim Nimah, 2nd edition, revised and expand - Mosul / University of Mosul
Main references (sources)	The Internet in general
Recommended books and references (scientific	Messages and theses, ancient and mode
journals, reports…)	
Electronic References, Websites	Iraqi academic journals, Research g US

	Course Description Form							
1.	Course	Name:						
	Vegetables production							
2. C	2. Course Code:							
	VEPR224							
3. Se	emester /	/Year:	<u> </u>					
4 . D	•			ter / second year				
4. De	escriptio	on Preparation		4/2024				
5 4 -				4/2024				
5. A	vallable	Attendance Fo		datam				
6 N	mboro	f Cradit Hours		datory r of Units (Total)				
U. IN	umper o	i Crean nours		mber of units (3)				
7 C	ourse ad	ministrator's n		, if more than one	name)			
		SGHAR ZAINI		THMAN MOHAN				
	-	vokirkuk.edu.						
		bjectives	-4					
		•	ing the winter and	summer vegetable	s crops,the original			
		-	-	-				
habita	ts of veg	etable crops, the	e climate suitable i	for their growth, ser	rvices, the date and			
metho	ds of pla	nting vegetables	s crops, identifying	g the varieties of ea	ch crop, of each and			
the bo	tanical d	escription each	crop.					
9. Te	eaching	and Learning S	Strategies					
Verba	l comm	unication with	students, urging	them to work tog	gether in the learning			
proces	s, using	written commu	unication skills to	increase compreh	ension, as well as th			
	•				the thinking strateg			
	-		•	-	ricultural projectserba			
				-	learning process, usin			
			-		l as the brainstormin			
			•	•	tegy according to th			
		t ructure	scientific visits to	agricultural projects	8			
10. C		Required						
Week	Hours	Learning Outcomes	Unit or subject name	Learning method	Evaluation method			
		Knowladge	Introduction and		Daily and monthly			
1	5	Knowledge and skills	definition of	lecture	exam, attendance			
			vegetable crops		and reports			
		Knowledge	Clasification of		Daily and monthly			
2	5	1 1 11		lecture	exam, attendance			

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Knowledge and skills	Introduction and definition of vegetable crops	lecture	Daily and monthly exam, attendance and reports
2	5	Knowledge and skills	Clasification of vegetables crops	lecture	Daily and monthly exam, attendance and reports
3	5	Knowledge	Facilities and	Lecture and	Daily and monthly
			100		

		and skills	tools necessary for growing vegetables	field	exam, attendance and reports
4	5	Knowledge and skills	Multiplication of vegetables crops	Lecture and field	Daily and monthly exam, attendance and reports
5	5	Knowledge and skills	Methods of irrigation vegetables crops	Lecture and field	Daily and monthly exam, attendance and reports
6	5	Knowledge and skills	Methods of fertilization vegetables crops	Lecture and field	Daily and monthly exam, attendance and reports
7	5	Knowledge and skills	Services vegetables crops	Lecture and field	Daily and monthly exam, attendance and reports
8	5	Knowledge and skills	Study solanaceae family as tomato and potato	Lecture and fields	Daily and monthly exam, attendance and reports
9	5	Knowledge and skills	Study solanaceae family as pepper and eggplant	Lecture and field	Daily and monthly exam, attendance and reports
10	5	Knowledge and skills	Study cucurbitacea as cucmber and squash	Lecture and field	Daily and monthly exam, attendance and reports
11	5	Knowledge and skills	Study cucurbitacea as melon and watermelon	Lecture and field	Daily and monthly exam, attendance and reports
12	5	Knowledge and skills	Study brassicaceae family as cabbage and califlower	Lecture and field	Daily and monthly exam, attendance and reports
13	5	Knowledge and skills	Study fabacae family as pea nad broad beans	Lecture and field	Daily and monthly exam, attendance and reports
14	5	Knowledge and skills	Study bulbous family as onion and garlic	Lecture +Field	Daily and monthly exam, attendance and reports
15	5	Knowledge and skills	Exan	Exam	
		valuation			
•				, .	(5) grades for daily
prepar	ation, p	articipation, and	1 submitting repor	its, (15) grade for	the practical semeste

exams, and (20) for the theoretical semester exams, and the final exam grade is from					
(60%), and the final practical exam is (20) The final theoretical exam is (40) marks					
12.Learning and Teaching Resources					
Baguirad taythoolse (aurrigular boolse, if an	Lectures prepared by the teacher based on				
Required textbooks (curricular books, if an relevant books and references.					
Main references (sources)	Vegetables production. Adnan Naser. 1989				
Recommended books and references	Iraqi academic scientific journals, including				
	Kirkuk University Journal of Agricultural				
(scientific journals, reports) Sciences					
Electronic References, Websites	International journals included in Scopus				

		Cou	rse Description	Form	
1.	Course N	Name:			
			Plant physiolog	gy	
2. Co	ourse Co	de:			
			PLPH225		
3. Se	mester /	Year:			
4 5	• • •		First semester	r	
4. De	escription	n Preparation Date:	21/02/2024		
5 4 -		A 44 on Jon on Forman	31/03/2024		
5. AV	allable A	Attendance Forms:	Mandatom		
6 Nu	mbor of	Credit Hours (Total) /	Mandatory	te (Total)	
U. INI	inder of		ours, Number of	· · · ·	
7. Co	urse adı	ministrator's name (mei		. ,	name)
		ne: Mohammed Abdul A			
	ourse Ob				
		udent to the aspects or fa	actors that plant	physiology	focuses on by studyin
		al processes that take place	-		j i i i j
	<u> </u>	•	*		
9. Te	eaching a	nd Learning Strategies			
	e	and Learning Strategies student to how to pla	n in the cultiv	vation of t	he field according t
[ntrodu	uce the	<u> </u>			0
Introdu enviro conditi	uce the nmental ions and	student to how to pla data and the student's a their impact on physiolog	bility to unders	tand the im	0
Introdu enviro conditi	uce the nmental	student to how to pla data and the student's a their impact on physiolog	bility to unders	tand the im	0
Introdu enviro conditi 10. C	uce the nmental ions and	student to how to pla data and the student's a their impact on physiolog ructure Required Learning	bility to unders fical processes ir Unit or	tand the im plants. Learning	0
Introdu enviro conditi 10. Co Veek	ice the nmental ions and ions the normal ions and ions an	student to how to pla data and the student's a their impact on physiolog ructure	bility to unders fical processes in Unit or subject name	tand the im plants. Learning method	pact of environmenta
Introdu enviro conditi 10. C	ace the nmental ions and ourse St	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology	bility to unders fical processes ir Unit or	tand the im plants. Learning	pact of environmenta
Introdu enviro conditi 10. Co Veek 1	ace the nmental ions and ourse Str Hours 5	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology.	bility to unders gical processes in Unit or subject name Knowledge	tand the im plants. Learning method lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam
Introdu enviro conditi 10. Co Veek 1 2	ice the nmental ions and ions	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems	bility to unders fical processes in Unit or subject name	tand the im plants. Learning method	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports
Introdu enviro conditi 10. Co Week 1	ace the nmental ions and ourse Str Hours 5	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology	bility to unders gical processes in Unit or subject name Knowledge	tand the im plants. Learning method lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports Daily and monthly exam
Introdu enviro conditi 10. Co Week 1 2	ice the nmental ions and ions	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems	bility to unders gical processes in Unit or subject name Knowledge Knowledge Knowledge Knowledge, skills and	tand the im plants. Learning method lecture lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports
Introdu enviro conditi 10. Co Week 1 2 3	ice the nmental ions and rourse Structure Hours 5 5 5 5	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems Water Relationships Absorption and Translocation of	bility to unders gical processes in Unit or subject name Knowledge Knowledge Knowledge Knowledge	tand the implants. Learning method lecture lecture lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam
Introdu enviro conditi 10. Co Veek 1 2 3 4	ice the nmental ions and ions	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems Water Relationships Absorption and Translocation of water and Minerals	bility to unders gical processes in Unit or subject name Knowledge Knowledge Knowledge Knowledge, skills and attitudes	tand the implants. Learning method lecture lecture lecture lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports
Introdu environ conditi 10. Co Week 1 2 3 4 5	ace the nmental ions and rourse Structure for the second structure in the second structure in the second structure is a second structure in the second structure in the second structure is a second structure in the second structure in the second structure is a second structure in the second s	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems Water Relationships Absorption and Translocation of water and Minerals Photosynthesis	bility to unders gical processes in Unit or subject name Knowledge Knowledge Knowledge Knowledge, skills and attitudes Knowledge Knowledge, skill and	tand the implants. Learning method lecture lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly examattendance and reports Daily and monthly examattendance and reports
Introdu enviro conditi 10. Co Veek 1 2 3 4 5 6	ice the nmental ions and rourse Structure for the second structure in the second structure is and rourse structure is second s	student to how to pla data and the student's a their impact on physiolog ructure Required Learning Outcomes Definition of plant physiology. Basic Rules of plant physiology Solution and colloidal systems Water Relationships Absorption and Translocation of water and Minerals Photosynthesis Photosynthesis	bility to unders gical processes in Unit or subject name Knowledge Knowledge Knowledge Knowledge, skills and attitudes Knowledge Knowledge, skill and attitude	tand the implants. Learning Learning method lecture lecture lecture lecture lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam

	1	1				
				skill		attendance and reports
10	5	Plant Nutrition	Kn	owledge,	lecture	Daily and monthly exam,
10	5		skill		locture	attendance and reports
11	5	Growth and	Kn	owledge,	lecture	Daily and monthly exam,
		Developments		skill	lootaro	attendance and reports
12	5	Plant hormones and plant growth regulators	Kn	owledge,	lecture	Daily and monthly exam,
		• •		skill		attendance and reports
13	5	Plant physiology under stress	Kn	owledge,	lecture	Daily and monthly exam,
		Kinds of stress, effect of stress	V.	skill		attendance and reports
14	5	and stress tolerance mechanisms	Kn	owledge, skill	lecture	Daily and monthly exam, attendance and reports
		General Review and Exam	Kn	owledge,		Daily and monthly exam,
15	5	Scheral Review and Exam	KII	skill	lecture	attendance and reports
11 C	ureo Fa	aluation		SKIII		uttendunée und reports
prepara monthl	ation, par y exams	the semester examination rticipation, and submitting for each exam (15) grade and Teaching Resources	g repo es, and	orts, (30) g	rades for mo	onthly exams, with two
Require	ed textbo	ooks (curricular books, if	any)	-	prepared by books and re	the teacher based on ferences.
				Field Crop Physiology, authored by Prof.		
	2			Ahmed Abu Al-Naga Qandil and Prof. Ali		
Main re	eference	s (sources)		Saeed Muhammad Sharif, 2012		
				Plant Physiology Hasan Jundiai 2003		
				-	~ ·	
Recommended books and references				Iraqi academic scientific journals, including Kirkuk University Journal of Agricultural		
(scienti	(scientific journals, reports)				inversity JO	urnal of Agricultural
	-	- · ·		Sciences	1	1
Electro	onic Refe	erences, Websites		Internati	onal journal	IS

	1
1. Course	e Name:
	Land leveling
2. Course	e Code:
	LALE226
3. Semes	ter / Year:
	Second semester/second year
4. Descri	ption Preparation Date:
	3/4/2024
5. Availa	ble Attendance Forms:
Is mar	Idatory
6. Numbe	er of Credit Hours (Total) / Number of Units (Total)
	2) hours for the theoretical part and (3) hours for the practical pa
number of u	
	e administrator's name (mention all, if more than one name)
	Professor Dr. Hussain Thahir Tahir
Email:	hussain.tahir@uokirkuk.edu.ig
8. Course	e Objectives
Course Objectiv	ves $1-$ The student is introduced to the basics of grading the land and preparing i
	for agricultural and construction purposes, as well as introducing him to the
	relationship of settlement to irrigation systems, methods of reclamation, and
	establishing flat projects.
	2- Prepare the student to develop an integrated plan for land grading and be
	able to identify the machines and machines needed for leveling and complete
	within practical and scientific timelines to ensure the preservation of the soil's
	physical and chemical properties.
9. Teachi	ng and Learning Strategies
Strategy	1- The student must have the ability to manage settlement projects
	according to the available capabilities.
	2- The student must have the ability to make the measurements
	required to calculate the productivity of machines used at work.
	3- To implement the knowledge and skills he learned in his
	practical life.
L	

10. Course Structure

Week Hours		Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	2+3	Show topic data word and Data Show	Introduction, historical overview, related sciences, importance in agricultural affairs, goals of settlement and land modification.	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	Types of settlement, criteria for choosing the type, application requirements.	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	Things and factors that must be followed before starting leveling and adjustment work, soil factors, environmental and plant factors, human factors, exploitation factors, outputs from leveling and adjustment.	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	Topographic variation: its relationship to settlement and adjustment, estimation methods, direct methods, indirect methods, preparing maps, interpreting maps within adjustment criteria and linking them to the purposes and objectives of agricultural exploitation.	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	Land modification without slope: importance, methods of	Calculator + Lectures	Daily questions + tests
6	Semester exam	use, purposes. Show topic data word and Data Show Field works, implementation methods, work stages, calculations and estimates, evaluation and evaluation.		Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data ShowLand modification with one slope: importance, methods of use, purposes, field work, implementation methods, work stages.		Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	Accounts and estimates, evaluation and evaluation.	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	Land modification with two slopes: importance, methods of use, purposes, field works,	Calculator + Lectures	Daily questions + tests

				nethods of		
				plementation,	0.1.1.	
10	2+3	Show topic data word	st	ages of work.	Calculator +	Daily questions +
		and Data Show Show topic data word	1.00011	nts and estimates,	Lectures Calculator +	tests
11	2+3	and Data Show		aluation and	Lectures	Daily questions +
		and Data Show	evaluation.		Lectures tests	tests
12	2+3	Show topic data word and Data Show	Selection of machines and machinery: types of machines, selection criteria, operational efficiency of machines, optimal choice curve.		Calculator + Lectures	Daily questions + tests
13	Semester	Show topic data word and Data Show	Laser leveling and adjustment strategies.		Calculator + Lectures	Daily questions + tests
	exam		-			
14	2+3	Show topic data word and Data Show	Making a settlement and modification plan, topographic factors, human factors, water resources		Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show	Nature and types of machines and machines, modification times (summer, winter). Ways to success.		Calculator + Lectures	Daily questions + tests
Degree	es are award	/ tests through questi ed for student partici	pation	in scientific res	earch and repo	orts
Studen	it activities t			nationa nalatad		a gubiagt
				rations related	to the academ	ic subject
12.	Learning a	nd Teaching Resou		rations related	to the academi	ic subject
				1-Levelig area of Agriculture 2- Machines a reclamation a Halim Hindaw Makki Majeed	. Written by Fe . University of nd equipment nd leveling, Dr vi / Agricultura Abboud Al-Sh	ereydoun. faculty Baghdad, 1987 for soil . Najeeb Abdel l Engineering, akarji /
Require		nd Teaching Resou		1-Levelig area of Agriculture 2- Machines a reclamation a Halim Hindaw Makki Majeed Agricultural E	. Written by Fe . University of nd equipment nd leveling, Dr vi / Agricultura	ereydoun. faculty Baghdad, 1987 for soil . Najeeb Abdel l Engineering, akarji / 81
Require Main re Recomr	d textbooks (d ferences (sour	nd Teaching Resou	urces	1-Levelig area of Agriculture 2- Machines a reclamation a Halim Hindaw Makki Majeed Agricultural E The Int	. Written by Fe . University of nd equipment nd leveling, Dr vi / Agricultura Abboud Al-Sh ngineering, 19 cernet in gener ges and thes	ereydoun. faculty Baghdad, 1987 for soil . Najeeb Abdel l Engineering, akarji / 81

		Course D	escription	Form	
1.	Course N	Name:			
		Freedom and	d Democra	icy	
2. Co	ourse Co			-	
2 0			FRDE227		
3. Sei	mester /		ostor/ soo	nd yoor	
4. De	scription	second sen n Preparation Date:	iestel/ sect	nu year	
	scription		8/03/2024		
5. Av	ailable A	Attendance Forms:			
			landatory		
6. Nu	mber of	Credit Hours (Total) / Num			
7 0-	unco od-	(1) Hours, 2 ninistrator's name (mention			nomo)
		st Prof. Basira Abdullah Ahm			
	ourse Ob			ouseraabaar	
		now the importance of studyir	g freedom	and democr	acy.
		nd Learning Strategies			
Verbal	commu	nication with students, urging		-	• •
Verbal using	commur written	nication with students, urging communication skills to	increase c	comprehensi	on, as well as the
Verbal using brainst	commun written orming r	nication with students, urging communication skills to nethod to attract students' atte	increase c	comprehensi	on, as well as the
Verbal using brainst to the s	commur written	nication with students, urging communication skills to nethod to attract students' atte ability.	increase c	comprehensi	on, as well as the
Verbal using brainst to the s	commun written orming r student's	nication with students, urging communication skills to nethod to attract students' atte ability.	increase c	comprehensi	on, as well as the
Verbal using brainst to the s 10. Co	commun written orming r student's ourse St r	nication with students, urging communication skills to nethod to attract students' atte ability. ructure Required Learning	increase c ntion, activ Unit or subject	comprehensivate the think	ion, as well as the king strategy according Evaluation method
Verbal using brainst to the s 10. Ce Week	commun written orming r student's ourse Str Hours	nication with students, urging communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes The concept of freedom, the concept of anarchy, the concept of democracy, the	increase c ntion, activ Unit or subject name Knowled	comprehensivate the think	on, as well as the king strategy according Evaluation method Daily and monthly examined
Verbal using brainst to the s 10. Co Week	commun written orming r student's ourse Str Hours	nication with students, urging communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes The concept of freedom, the concept of anarchy, the concept of democracy, the historical Forms of the system:	increase c ntion, activ Unit or subject name Knowled ge Knowled ge Knowled ge	comprehensivate the think	on, as well as the king strategy according Evaluation method Daily and monthly exam attendance and reports Daily and monthly exam attendance and reports
Verbal using brainst to the s 10. Co Week	commun written orming r student's burse St r Hours 1	nication with students, urging communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes The concept of freedom, the concept of anarchy, the concept of democracy, the historical Forms of the system: indirect	increase c ntion, activ Unit or subject name Knowled ge Knowled ge Knowled	comprehensivate the think Learning method lecture lecture	 as well as the king strategy according Evaluation method Daily and monthly examattendance and reports Daily and monthly examattendance and reports Daily and monthly examattendance and reports
Verbal using brainst to the s 10. Co Week 1 2 3	commun written orming r student's Durse Str Hours 1 1	nication with students, urging communication skills to nethod to attract students' atte ability. ructure Required Learning Outcomes The concept of freedom, the concept of anarchy, the concept of democracy, the historical Forms of the system: indirect Civil,society,	increase contion, active Unit or subject name Knowled ge Knowled ge Knowled ge Knowled ge	Learning method lecture lecture	 as well as the king strategy according Evaluation method Daily and monthly examattendance and reports

		democratic system and its	ge, skill		attendance and reports
		characteristics	and attitude		
7	1	Features of the democratic system	knowled ge	lecture	Daily and monthly exam, attendance and reports
8	1	development of the concept of democracy in the Mesopotamian civilization	knowled ge	lecture	Daily and monthly exam, attendance and reports
9	1	The pillars of democracy, the basic conditions of the democratic system	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
10	1	Features of the democratic system, types democracy	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
11	1	democracy, democracy, concept, and manifestations	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
12	1	Different systems of election	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
13	1	Democracy applications	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
14	1	democratic values and functions	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
15	1	The report on human rights in Islam comprehended and surpassed all hypothetical	Knowled ge, skill	lecture	Daily and monthly exam, attendance and reports
11.Co	ourse Ev	aluation		1	
prepara	ation, par	the semester examination is rticipation, and submitting repo- for each exam (15) grades, and	orts, (30) g	rades for mo	onthly exams, with two
	-	and Teaching Resources	U		
		ooks (curricular books, if any)	Lectures prepared by the teacher based on relevant books and references.		
Main r	eference	s (sources)		•	emocracy / Dr. Ghassan d Zein Al-Abidin Tohm
		books and references	Iragi agad	lemic scient	ific journals, including
	-	nals, reports)	-		
Electro	onic Refe	erences, Websites	Internati	onal journa	ls.
			109		

		Course D	escription I	Form	
1.	Course N	Name:			
		Computer A	pplications/	4	
2. Co	ourse Co				
		(COAP228		
3. Se	mester /			_	
1 Da			ester/ secon	d year	
4. De	scription	n Preparation Date:	8/03/2024		
5. Av	vailable /	Attendance Forms:	3/03/2024		
			Iandatory		
6. Nu	imber of	Credit Hours (Total) / Num	~	s (Total)	
			Number of u	· · /	
		ninistrator's name (mention	,		
		st Prof. Basira Abdullah Ahm	ed Email: ba	aseraabdul	lah@uokirkuk.edu.iq
	ourse Ob		e 41		1
	0	e student to the component put and graduation, and		- /	
		ng the main applications in t	- 0		sopping the student s
	-	nd Learning Strategies		•	
	<u> </u>	nication with students, urging	them to worl	c together	in the learning process,
-		communication skills to		-	
	•	nethod to attract students' atte	ntion, activa	te the thinl	king strategy according
	student's	5			
10. C					
		ructure	Unit or	Logrni	
Week	Hours	Required Learning	Unit or subject	Learni	Evaluation method
Week	Hours		Unit or subject name	Learni ng method	Evaluation method
Week	Hours	Required Learning Outcomes	subject	ng	Evaluation method
Week	Hours 3	Required Learning Outcomes Identifying the computer	subject name Knowledg	ng	Daily and monthly exam,
		Required Learning Outcomes Identifying the computer and its parts, turning the	subject name	ng method	
	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off	subject name Knowledg	ng method	Daily and monthly exam,
		Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts,	subject name Knowledg e	ng method	Daily and monthly exam, attendance and reports
	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts, input/output units,	subject name Knowledg	ng method	Daily and monthly exam, attendance and reports
1	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts, input/output units, memory, central	subject name Knowledg e Knowledg	ng method lecture	Daily and monthly exam, attendance and reports Daily and monthly exam,
1	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts, input/output units,	subject name Knowledg e Knowledg e	ng method lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports
1	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts, input/output units, memory, central processing unit	subject nameKnowledg eKnowledg eKnowledg e	ng method lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam,
1 2	3	Required Learning Outcomes Identifying the computer and its parts, turning the computer on/off Computer parts, input/output units, memory, central processing unit Central Processing Unit	subject name Knowledg e Knowledg e	ng method lecture lecture	Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports

		how to communicate with			
		computer parts			
4	3	Input units (mouse/keyboard), output units (Monitor), memory (RAM, ROM)	Knowledg e, skills and attitudes	lecture	Daily and monthly exam, attendance and reports
5	3	Secondary memory, hard disk parts, how to store information on the disk, information about the disk	knowledge	lecture	Daily and monthly exam, attendance and reports
6	3	Introduction to the operating system (Windows), application software	Knowledg e, skill and attitude	lecture	Daily and monthly exam, attendance and reports
7	3	Practical exam (1)	knowledge	lecture	Daily and monthly exam, attendance and reports
8	3	Windows - use the mouse, minimize/maximiz e windows - close windows, close windows, exit windows	knowledge	lecture	Daily and monthly exam, attendance and reports
9	3	Moving windows from one place to another, controlling window size (width/height), taskbar - date, time	knowledge	lecture	Daily and monthly exam, attendance and reports
10	3	Organizing the address list - Copying images and texts - Splitting web pages - Printing web pages - Search engines - How to search for information on the network - Using the search button in the toolbar -	knowledge	lecture	Daily and monthly exam, attendance and reports
11	3	MY COMPUTER Desktop, Create a shortcut icon for an application or file,	knowledge	lecture	Daily and monthly exam, attendance and reports

		Recycle Bin - Window Explorer, Format floppy disks			
12	3	Install files - select/choose folder, create folder - rename, delete file/folder, copy file/folder, move file/folder	knowledge	lecture	Daily and monthly exam, attendance and reports
13	3	Screen settings - screen saver, change mouse cursor - double transfer speed control	knowledge	lecture	Daily and monthly exam, attendance and reports
14	3	Software Installation and Uninstallation, Disk Information, Help Request) HELP	knowledge	lecture	Daily and monthly exam, attendance and reports
15	3	Practical exam (1)	knowledge	lecture	Daily and monthly exam, attendance and reports
11.Co	ourse Ev	aluation			
The gr prepara monthl	rade for ation, par ly exams	the semester examination is ticipation, and submitting repo for each exam (15) grades, and	orts, (30) gra	des for mo	onthly exams, with two
12.Le	earning a	and Teaching Resources	Lectures pr	enared by	the teacher based on
Requir	ed textbo	ooks (curricular books, if any)	Lectures prepared by the teacher based on relevant books and references.		
Main references (sources)			Computer basics and office applications (Par forth) / Ziad Muhammad Aboudi, Ghassan Hamid Abdel Majeed, Mustafa Diaa Al-Hass		
Recommended books and references			Iraqi academic scientific journals, including		
		als, reports)	Iraqi acade	mic scient	inc journals, including

	Course Description Form
1. Course Na	ime:
	Soil Physics
2. Course Co	de:
	SOPH311
3. Semester	/ Year:
	First semester/third year
4. Descriptio	on Preparation Date:
31/3/2024	
5. Available A	Attendance Forms:
Is mandatory	
6. Number of	f Credit Hours (Total) / Number of Units (Total)
(5) hours, (2) h number of units	ours for the theoretical part and (3) hours for the practical part, (3)
7. Course ad	dministrator's name (mention all, if more than one name)
	: Professor Wael Fahmi Abdulrahman ni@uokirkuk.edu.iq
8. Course Ob	
Course Objectives	Enabling the student to understand and comprehend the subject of soil
	physics and how to take soil models and analyze them in the laboratory
9. Teaching a	and Learning Strategies
exj 2- un	Explanation of topics at length while conducting laboratory periments Presenting questions about the topic to demonstrate students' derstanding through their answers Conduct daily examinations and prepare practical reports
10. Course Str	ructure

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation
		Outcomes		method	method
1	2+3	Show topic data word and Data Show	1–Soil as three phase 2– Mathematical relation ships of soil component	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	1–Soil texture 2– Example of mathematical	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	1–Stoke s law 2– Determination of soil texture	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	1–Limitation of Stoke s law 2– Hydraulic conductivity method	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	1-Soil structure 2-Pipette method	Calculator + Lectures	Daily questions + tests
6	Seme ster exam	Show topic data word and Data Show	1–Specific surface area 2– soil moisture determination	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	1-Potential of water 2- Soil moisture curve	Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	Examination	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	1-Types of water potential 2-Bulk densitz	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	1–Darcy s law 2– Determination of structure	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	1–Shear strength 2– Mean weight diameter	Calculator + Lectures	Daily questions + tests
12	2+3	Show topic data word and Data Show	1–Soil aeration 2–Soil consistency	Calculator + Lectures	Daily questions + tests
13	Seme ster exam	Show topic data word and Data Show	Examination	Calculator + Lectures	Daily questions + tests
14	2+3	Show topic data word and Data Show	1–Soil temperature 2–Upper and lower limit	Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show	1–Soil radiation 2–Soil crust	Calculator + Lectures	Daily questions + tests

11. Course Evaluation

Daily and monthly tests through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports

Student activities by creating posters an	d illustrations related to the academic subject			
12. Learning and Teaching Resources				
Required textbooks (curricular books, if any)	 Basics of soil physics. Written by Hillel, Daniel. Translated by Dr. Mahdi Ibrahim Odeh. 1990. Fundamental of soil physics. D. Hillel. 1980. Principles of Soil Physics. Lal ana Shukla. 2004. USA. Environment of Soil Physics. D. Hillel. 2004. USA. 			
Main references (sources)	The Internet in general			
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern			
Electronic References, Websites	Iraqi academic journals, Research gate, USGS			

1. Course Name:

Soil Organic Matter

2. Course Code:

SOOR312

3. Semester / Year:

First Semester/third year

4. Description Preparation Date:

3/4/2024

5. Available Attendance Forms:

Is mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours, (2) hours for the theoretical part and (3) hours for the practical part number of units (3)

7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee

Email: <u>Hanansalah@uokirkuk.edu.iq</u>

8. Course Objectives

Course Objectives	: Estimating the percentage of organic matter
The main goal of this program is to teach students	the soil using various laboratory methods
basic concepts related to organic matter in the soil and	Estimate it in the field and then express
understand its role in various environmental syste	quantitatively in kilograms or tons per hectare
including agricultural, forests, marshes, and swam	Drawing a relative outcome of the organic carb
The overall objectives of this study are to make	balance between the soil and its external
student able to:	surroundings

9. Teaching and Learning Strategies

Strategy	
	A- Cognitive objectives
	A1- The student gets to know the concept of organic matter in the soil
	A2- The student should classify the sources of organic matter in the soil
	A3- The student should distinguish between different types of organic
	aggregates according to the speed of their decomposition and their
	chemical, physical and natural properties.
	A4- To recognize the types of organic matter and their functions in the soil
	A5- To know the significance of the presence of each type of organic matter
	and its relationship to the functions of the soil
	A6- Linking the proportions and types of organic materials and soil
	management methods within the framework of sustainable development
	B - The skills objectives of the course.
	B1 - Enabling students to learn about methods for studying the types of
	organic matter in the soil
	0
	B2 - Establishing technical and professional skills to the extent that qualifies
	the student to choose appropriate agricultural methods for managing
	116

	org	ganic matter in the s	soil		
10. Course Structure					
Week	Hours	Required	Unit or subject name	Learning	Evaluation
		Learning		method	method
		_		mounou	linetheu
		Outcomes			
1	2+3	Show topic data word and Data Show	Defining organic matter and determining its origin and nature in the soil	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	Distinguish between types of soils according to their organic content and its relationship to climatic and environmental conditions	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	The concept of soil environment, biological activity, and the food web in it	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	Processes of transformation of organic matter in the soil, such as decomposition, mineralization, organic matter, etc	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	Classification of organic matter in the soil according to the speed of its decomposition, the degree of its solubility, and the ratio of carbon to nitrogen in it	Calculator + Lectures	Daily questions + tests
6	Semester exam	Show topic data word and Data Show	Factors affecting the formation of humus in soil: soil environment, nature of the main components of organic matter and microbial mass	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	Types of humus according to the type of vegetation cover, the degree of its solubility	Calculator + Lectures	Daily questions + tests

			with alkaline solvents, and its saturation with basic cations.		
8	2+3	Show topic data word and Data Show	Physical, chemical and physical properties of humic and humic acids	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	The organic-mineral complex, the relationship of active groups, and the ratio of fulvic acid to humic acid in soil formation	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	The nature of carbon categories and their implications for the agricultural and environmental value of the soil in terms of its fertility, release of nutrients, and resistance to pollution.	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	How to preserve the organic stock in the soil and manage it sustainably	Calculator + Lectures	Daily questions + tests
12	2+3	Show topic data word and Data Show	The necessity of fertilizing with animal waste and compost to preserve agricultural soil	Calculator + Lectures	Daily questions + tests
13	Semester exam	Show topic data word and Data Show	Explaining the effect of traditional agricultural methods on depleting the soil of its organic stock	Calculator + Lectures	Daily questions + tests
14	2+3	Show topic data word and Data Show	Understanding the sequential and interconnected effects of organic matter in improving soil characteristics and the impact of this on the overall components of the ecosystem	Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show	Focusing on the role of organic matter in sustainable development: protecting lands from degradation,	Calculator + Lectures	Daily questions + tests

p	desertification and ollution, in addition to reducing climate change.
11. Course Evaluation	
Degrees are awarded for student participation	ns presented to them on the subject studied ation in scientific research and reports illustrations related to the academic subject
12. Learning and Teaching Resour	ces
Required textbooks (curricular books, if any	 Soil Organic Matter and Biological Activity - Springer link.springer.com/book/10.1007%2F978-94-009-5105-1 Academic edition. Corporate edition. Skip to: Main Book. Developments in Plant and SoilSciences. Volume 16 1985 Pages 1-35. Introduction Soil Organic Matter — A Perspective on its Nature, Extraction, Turnover and Role in Soil Fertility.
Main references (sources)	 Soil Organic Matter in Sustainable Agriculture (Advances in Agroecology) by Fred Madoff and Ray R. Weil (May 27, 2004). CRC Press; 1 edition. 416 pages. Soil Organic Matter Characterization. Chapter 3. Carbon Nitrogen in the Terrestrial Environment. Publisher Sprin Netherlands 2008, pp 81-111
Recommended books and reference (scientific journals, reports)	
Electronic References, Websites	Soil Organic Matter - (Second Edition) - ScienceDirect www.sciencedirect.com/science/book/9780080114705 The online version of Soil Organic Matter by M Kononova on ScienceDirect.com, the world's lea platform for high quality peer-reviewed full-text boo

1. Course Nam	
	Soil Fertility
2. Course Cod	e:
	SOFE313
3. Semester /	Year:
	First Semester/third year
4. Description	Preparation Date:
	3/4/2024
5. Available A	ttendance Forms:
Is mandato	ry
6. Number of C	Credit Hours (Total) / Number of Units (Total)
• • • • •	ours for the theoretical part and (3) hours for the practical part
number of units (
	ministrator's name (mention all, if more than one name)
	an Salah Mahdee
	nansalah@uokirkuk.edu.iq
8. Course Obje	
Course Objectives	Fertilizers and soil fertility is a science that seeks to identify the basic
	concepts of soil fertility and productivity, learn about the relationship
	between soil and plants, know the amount of nutrients in the soil, how
	much of them the plant needs, how to add them, and the methods and
	times of adding them to agricultural fields.
9. Teaching an	nd Learning Strategies
A1- A2- A3- A4- prot A5- prot B - 7 B1 - B2 - fert	Cognitive objectives The student gets to know the concept of soil fertility science The student should classify the sources of fertilizers in nature The student should separate between natural and chemical fertilizers The student will analyze the amount of nutrients in the soil and tect the soil from pollution The student should evaluate the cost of adding fertilizers and ductivity The program's skill objectives Introducing the student to the concept of soil fertility science The student's ability to evaluate the addition of organic and biological ilizers with traditional systems - Enable students to analyze production costs

Veek	Hours	Required Learning	Unit or subject name	Learning method	Evaluation method	
		Outcomes				
1	2+3	Show topic data word and Data Show	Teach the student terminology related to soil fertility and productivity	Calculator + Lectures	Daily questions + tests	
2	2+3	Show topic data word and Data Show	Studying the necessary elements, whether major or minor, and how to calculate chemical and organic fertilizers	Calculator + Lectures	Daily questions + tests	
			The student will learn			
_			Show topic data	about methods of	Calculator +	Daily questions
3	2+3	word and Data Show	adding fertilizers and	Lectures	+ tests	
			evaluating soil fertility			
			The student gets to			
	a .a	Show topic data word and Data Show	know the properties of	Calculator + Lectures	Daily questions + tests	
4	2+3		chemical and natural			
			fertilizers			
			For the student to	Calculator + Lectures	Daily questions + tests	
_	2.2	Show topic data	become familiar with			
5	2+3	word and Data Show	chemical fertilizer			
			calculations			
			For the student to learn			
			about the relationship			
		Show topic data	of soil and plant			
6	Semester exam	word and Data Show	analyzes to various	Calculator + Lectures	Daily questions + tests	
		Show	fertilization			
			7recommendations for			
			plant growth			
			The student will be			
7	2+3	Show topic data word and Data	familiar with the	Calculator + Lectures	Daily questions	
1	273	Show	sources of fertilizers,		+ tests	
			classification of			

			fertilizers, methods of			
			adding fertilizer, and			
			comparison between			
			animal and chemical			
			fertilizers			
			The student gets to			
8	2+3	Show topic data word and Data	know fertilizer needs	Calculator +	Daily questions	
0	213	Show	and the fertilizer	Lectures	+ tests	
			equation			
			The student will be			
9	2+3	Show topic data	familiar with the	Calculator +	Daily questions + tests	
9	2+3	word and Data Show	evaluation of soil	Lectures		
			fertility			
			The student will be			
10	2+3	Show topic data word and Data Show	familiar with methods	Calculator + Lectures	Daily questions + tests	
10			of calculating organic			
			fertilizers			
	2.2	Show topic data	For the student to get	Calculator +	Daily questions	
11	2+3	word and Data Show	to know	Lectures	+ tests	
		Show tonia data	The student will know			
12	2+3	Show topic data word and Data	how to calculate added	Calculator + Lectures	Daily questions + tests	
		Show	organic fertilizers	Looturos	1 10515	
			The student will be			
1.0	Semester	Show topic data	familiar with the methods	Calculator +	Daily questions	
13	exam	word and Data Show	of measuring elements	Lectures	+ tests	
			14in the soil			
			The student will be			
			familiar with the types			
		Show topic data	and methods of adding	Calculator +	Daily questions	
14	2+3	word and Data Show	fertilizers and how to	Lectures	+ tests	
			conduct agricultural			
			experiments			
15	Semester exam					

11. Course Evaluation

Daily and monthly tests through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports Student activities by creating posters and illustrations related to the academic subject

12. Learning and Teaching	Resources
Required textbooks (curricular books, if any)	 Awad, Kazem Mashhout (1987) Fertilization and Soil Fertility, Ministry of Higher Education and Scientific Research, University of Basra. Al-Naimi, Saadallah (1999) Fertilizers and soil fertility. Ministry of Higher Education and Scientific Research, University of Mosul.Baghdad. Translated. Havlin, J.L., Tisdale, S.L., Nelson, W.L., and Beaton, J.D. 2005, Soil Fertility and Fertilizers, 5th edition. USA Page, A.L. et. Al. 1982, Methods of soil analyisi, part 2 2nd Chemical and microbiological properties. Madison, Wisconsin, USA
Main references (sources)	The Internet in general
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern
Electronic References, Websites	Soil Science Society Of America Library Genesis

1. Course Nam	ie:
	Irrigation
2. Course Code	e:
	IRRI314
3. Semester / Y	Year:
	First semester/Third year
4. Description	Preparation Date:
	31/3/2024
5. Available At	ttendance Forms:
Is mandator	су.
6. Number of C	Credit Hours (Total) / Number of Units (Total)
	urs for the theoretical part and (3) hours for the practical pa
number of units (3	ninistrator's name (mention all, if more than one name)
	stant Professor Wael Fahmi Abdulrahman
	fahmi@uokirkuk.edu.iq
8. Course Obje	ectives
Course Objectives	1- Studying different irrigation methods and systems
	2- Studying the optimal use and increasing the efficiency of water use
9. Teaching an	d Learning Strategies
mod 2- E net for 3- E irrig inte 4- U 5- E mov 6- J	Enable the student to learn how to evaluate and characterize dern irrigation methods Enabling the student to know how to use irrigation and draina works for soil, and to obtain the best methods and exploit the agriculture Enabling the student to know how to conduct the modern gation method and link it with the puncture system to achieve egration between the irrigation and puncture process Using modern methods and training students on them Enabling students to use modern software and model irrigation vement Linking irrigation issues with the drainage system to achieve egration

Neek	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	Show topic data word and Data Show	The concept of irrigation, irrigation in ancient and modern times.	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	Irrigation water sources, irrigation water quality.	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	Soil physical properties associated with irrigation.	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	The relationship of water with soil, soil moisture constants, movement of water in the soil, water changes.	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	Water measurement	Calculator + Lectures	Daily questions + tests
6	Semes ter exam	Show topic data word and Data Show	Plant water consumption	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	Water needs and irrigation scheduling.	Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	First month exam	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	Transport and distribution of irrigation water, movement of water in pipes and open channels.	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	Design of soil and lined irrigation channels.	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	Adequacy, efficiency and consistency of irrigation.	Calculator + Lectures	Daily questions + tests
12	2+3	Show topic data	Traditional irrigation	Calculator	Daily

		word and Dat Show	a	methods.	+ Lectures	questions + tests
13	Semes ter exam	Show topic da word and Dat Show		Modern irrigation methods.	Calculator + Lectures	Daily questions + tests
14	2+3	Show topic data word and Data Show		Pumping water and how to calculate pump capacity.	Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show		Second month exam	Calculator + Lectures	Daily questions + tests
		Evaluation				
Degree: Student	s are awa t activities	rded for student p	oarticip ers and	ons presented to them o pation in scientific resea d illustrations related to rces	arch and repo	rts
Require	d textbool		-	gation, its basics and ap	-	ritten by Dr.
if any)			1990. 2- Irrig	Ibrahim Al-Tayef and Is gation and drainage. Wi		Al-Hadithi.
- ,	ferences (1990. 2- Irrig	-	ritten by Dr. L	Al-Hadithi.
- ,	ces (scie		1990. 2- Irrig	gation and drainage. Wi . 2000.	ritten by Dr. L l	Al-Hadithi. Laith Khalil

	ourse Na	me.
1. CC		Soil Chemistry
2 Co	ourse Co	· · · · · · · · · · · · · · · · · · ·
2. 00		SOCH315
3. Se	mester /	
		First semester/Third year
4. De	escription	n Preparation Date:
	i	3/4/2024
5. Av	vailable A	Attendance Forms:
Is	mandato	ry
6. Ni	umber of	Credit Hours (Total) / Number of Units (Total)
(5) hou	rs, (2) 1	nours for the theoretical part and (3) hours for the practical part
number of	of units (3)
		ninistrator's name (mention all, if more than one name)
		nan Salah Mahdee
		anansalah@uokirkuk.edu.iq
	ourse Ob)
Course Obj	ectives	Soil chemistry studies the chemical and physicochemical properties of soil (soil colloids, organic matter, and electrochemical properties)
9. Te	aching a	nd Learning Strategies
Strategy		
	-	nitive objectives
		e student gets to know the concept of soil chemistry
	A2- The colloids	e student will be familiar with the structure of mineral and organic soil
		e student should understand the ionic exchange capacity and the factors
	affectin	
		e student should distinguish between types of soil acidity
		learn about adsorption and the equations to describe it
		know the significance of the soil's ability to stabilize and retain some ions nnecting the liquid phase and the solid phase of the soil
	A7- C0	infecting the fiquid phase and the solid phase of the soli
	B- The	program's skill objectives
		roducing the student to the concept of soil chemistry
		e student's ability to distinguish between positive adsorption and negative
	-	ion in soil able students to recognize the equations describing adsorption
		at the student is able to identify methods for estimating ion exchange
	capacity	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	Show topic data word and Data Show	The student will be familiar with the concept of soil chemistry and its relationship to soil characteristics.	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	The student will be familiar with the structure of mineral and organic colloids	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	The student gets to know the concept of adsorption	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	The student will be familiar with the equations describing adsorption	ar with the Calculator + ns describing Lectures	
5	2+3	Show topic data word and Data Show	The student gets to know the ionic exchange capacity in soil and the equations to describe it	Calculator + Lectures	Daily questions + tests
6	Semest er exam	Show topic data word and Data Show	The student gets to know the factors determining ion exchange capacity	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	The student will learn about negative and positive ion exchange and its importance in the soil	Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	The student gets to know the capacity and speed of displacement	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	The student gets to know the concept of fixing elements	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	The student gets to know the concept of holding elements	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	The student gets to know the types of soil acidity	Calculator + Lectures	Daily questions + tests

12	2+3	Show topic data word and Data Show	kno	student gets to w the factors ing soil acidity	Calculator + Lectures	Daily questions + tests
13	2+3	Show topic data word and Data Show	The student gets to know the concept of buffer capacity		Calculator + Lectures	Daily questions + tests
14	Semest er exam	Show topic data word and Data Show	comp soil their	student gets to know the conents of the solution and relationship to coil fertility	Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show	The student will be familiar with calculating the coefficient of effectiveness and efficiency		Calculator + Lectures	Daily questions + tests
Degrees Student	s are award activities	ly tests through question ded for student participation by creating posters and il nd Teaching Resourc	ion in s llustrati	cientific research	h and reports	
		ts (curricular books, if an		Haider Al-Z Qaddouri, 19	ubaidi, and N	mistry - Minis
Main re	Main references (sources)			2- Kazem Mashhout Awad, 19 Principles of Soil Chemistry, - Ministry Higher Education and Scientific Researc		
journals	, reports		entific	<u> </u>	gn academic sci	
Electronic References, Websites					ce Society (ry Genesis	Of America

	Course Description Form					
1. Course	e Name:					
	Soil and water pollution					
2. Course						
	SOWA316					
3. Semes	ter / Year:					
	first semester /Third year					
4. Descri	ption Preparation Date:					
31/3/2024						
5. Availat	ole Attendance Forms:					
Is man	Idatory					
	er of Credit Hours (Total) / Number of Units (Total)					
(5) hours, (2 of units (۲)) hours for the theoretical part and (3) hours for the practical part, num					
	e administrator's name (mention all, if more than one name)					
	Sameerah Faydhllah Mohamed soil_70@uokirkuk.edu.iq					
	e Objectives					
Course Objectiv	 Presenting the idea of soil and water pollution to the student The definition of pollution, including its origins and causes; the sorts of ecosystems; Determine the elemental cycles and how they affect pollution in the environment. Ne determine the pollution of water, including that in surface and groundwater. Recognize soil pollution, including biological soil pollution, pesticide-contaminated s pollution, and pesticide biodegradation in the soil. Recognize bacterial and viral water pollution, industrial water pollution, and the beh of pesticides in the aquatic environment. 					
9. Teachi	ng and Learning Strategies					
Strategy	• Brainstorming • Thinking strategy based on the student's aptitude, such as (if the student can manalytic techniques, he will gain expertise in connecting the chemical and phycharacteristics of the soil with fertility).					
	• The term "critical thinking strategy" in education refers to the highest stag thinking and entails posing an issue, analyzing it logically, and then coming up v desired solution.3. Perform assessments on a daily and weekly basis and provide u					

		reports.				
10.	Co	ourse Structure				
Neek	Hours	Required Learning	Unit or subject name	Learning	Evaluation	
		Outcomes		method	method	
1	2+3	The ecology, as well as the definition, origins, and effects of pollution, are taught to the students.	Taking soil samples and preparing them for examination analysi	Soil and water pollution	Examination	
2	2+3	The elements' cycles— nitrogen, phosphorus, oxygen, carbon, and sulfur—are taught to the pupil.	taking plant samples and testing water samples	Soil and water pollution	Examination	
3	2+3	The learner will gain knowledge regarding pollution of ocean, groundwater, and surface waters.	calculating and preparing standard solutions for the exam	Soil and water pollution	Examination	
4	2+3	The subject will study water contamination caused by bacteria, viruses, and worms.	. Preparing extracts and measuring the pH and EC test	Soil and water pollution	Examination	
5	2+3	The learner will be conversant with battery, fertilizer, and industrial water pollution.	, estimation of exchange images and exchange capacity of positive ions, CEC exam	Soil and water pollution	Examination	
6	Examina tion	The action of pesticides on living things as well as in aquatic environments is explained to the student.	for estimating the level of organic carbon.	Soil and water pollution	Examination	
7	2+3	The learner will get knowledge about sewage waste, fertilization behavior in water pollution, and biological pollution.	for determining ready-made nitrogen and ready-made potassium, explanation and display of pictures	Soil and water pollution	Examination	
8	2+3	The segmentation of water according to its suitability for various uses will be familiar to the student.	such as ready-made nitrogen and potassium	Soil and water pollution	Examination	
9	2+3	The learner learns about biological contamination of soil.	estimation of ready-made phosphorus	Soil and water pollution	Examination	
10	2+3	The learner will gain knowledge on pesticide	Estimation of the total soil content of elements	Soil and water pollution	Examination	
11	2+3	contamination of soil, including how pesticides behave in various soil types and how they decompose naturally.	Mineral analysis using an X- Ray device	Soil and water pollution	Examination	
12	2+3	The learner will gain knowledge about how pesticides are controlled	determination of the redox potential of soil	Soil and water pollution	Examination	

		chemically and naturally in the soil, as well as how plants absorb pesticides.				
13	2+3	The student will gain knowledge about radioactive contamination,	digesting plant samples and determining their element content	Soil and water pollution	Examination	
14	2+3	thermal pollution, ozone layer depletion, and global warming.	digesting plant samples and determining their element content	Soil and water pollution	Examination	
15	2+3	Examination	Examination	Examination	Examination	
Daily and monthly tests Participate by asking questions that are models of scientific discussions related to the academic subject Submissions activities through new work and scientific reports 12. Learning and Teaching Resources Required textbooks (curricular books, if any) Ittle Ittle Ittle Ittle Submissions activities through new work and scientific reports 12. Learning and Teaching Resources Ittle I						
Require	d textboo	nd Teaching Resources ks (curricular books, if any)	یاء عبد الجبار [2] [2] [2] [2] [2] [2] [2] [2] [2] [2]	, 1980. Analytical ch Inc. 2002. Methods in Ag isi. A practical Hand boratory method ma gation report. No. 42	emistry. John gricultural dBook. CABI anual, 2004. Soil , version 4.0,	
Require Main re	d textboo	nd Teaching Resources ks (curricular books, if any) (sources)	جباء عبد الجبار [2] 1- G.D. Christian Wiley & Sons. 2- N.T. Faithfull, chemical analy publishing. 3- Soil Survey La survey Investig USDA. ١٩٨٨. ١٩٨٨.	, 1980. Analytical ch Inc. 2002. Methods in Ag isi. A practical Hand boratory method ma gation report. No. 42	emistry. John gricultural dBook. CABI anual, 2004. Soil , version 4.0,	

1 (-		
1. (Course Na	me:			
		Analysis	and Experimental	Design	
2. (Course Co	de:			
			EXDE317		
3. 5	Semester ,	/ Year:			
		Firs	t semester/Third ye	ear	
4. J	Descriptio	n Preparation Dat	e:		
31/3/2	024				
5. 1	Available A	Attendance Forms:			
J	s mandate	ory			
			l) / Number of Unit	· · · ·	
			pretical part and ((3) hours for	the practical p
	er of units				
			ne (mention all, if n	nore than on	e name)
		Zakarya Mahmod I <u>amahmod@uokir</u> l			
			<u>Xux.euu.ių</u>		
	Course Ob	-			
Course	Objectives	-	about the types of agr		
2- How to design, analyze and interpret single-factor agricultural experiments					
	3-How to compare transaction averages				
	4-How to design, analyze and interpret two-factor agricultural experiments 5-Learn about the concept of correlation and regression and how to				
			-	and regression	and now to
	calculate and interpret them				
9.	leaching a	nd Learning Strate	gies		
Strategy		0	ith the skills of applyi	ng scientific me	ethods regarding
		nagement of agricult aining the student to	design and plan exper	riments accord	ing to the designs.
		-	t with the necessary s		
	how to	give appropriate scie	entific judgments		
10. Co	ourse Struc	ture			
		Required	Unit or oubicat	Loomina	Evaluation
Week	Hours	Learning	Unit or subject	Learning	
		Outcomes	name	method	method
			Statistics exercises		
1	2+3	A general review in statistics Statistical	Discussion of statistical	Calculator +	Daily questions + tests

2	2+3	Complete Randomized (CRD)	Design	Statistics exercises Discussion of statistical tests	Calculator + Lectures	Daily questions + tests
3	2+3	Dunnett's Tes Significant Dir Test (LSD) - D Test	fference	s Discussion of statistical tests	Calculator + Lectures	Daily questions + tests
4	2+3	Randomized Complete Block Design (RCBD)		Exercises in CRD	Calculator + Lectures	Daily questions + tests
5	2+3	Randomized Complete Block Design (RCBD)		Exercises on how to test averages in CRD	Calculator + Lectures	Daily questions + tests
6	Semester exam				Calculator + Lectures	Daily questions + tests
7	2+3	Latin Square (LSD)		Exercises in RCBD	Calculator + Lectures	Daily questions + tests
8	2+3	Factorial Expe	eriments	Exercises in RCBD	Calculator + Lectures	Daily questions + tests
9	2+3	Split-Plots D	-	Exercises in LSD	Calculator + Lectures	Daily questions + tests
10	2+3	Split-block (or strip- plot) design		Exercises in Factorial Experiments (RCBD)	Calculator + Lectures	Daily questions + tests
11	2+3	Regression Analysis		Exercises in Split-Plots Design	Calculator + Lectures	Daily questions + tests
12	2+3	Regression Analysis		Exercises in LSD strip- plot design	Calculator + Lectures	Daily questions + tests
13	Semester exam				Calculator + Lectures	Daily questions + tests
14	2+3	Factorial Experiments		Exercises in Factorial Experiments	Calculator + Lectures	Daily questions + tests
15	2+3	Factorial Expe	eriments	Exercises in Regression	Calculator + Lectures	Daily questions + tests
Daily an						
		U		d illustrations related	to the academ	ic subject
12. Le	earning ar	nd Teaching				
Required books, if	Required textbooks (currici books, if any)			and analysis of agricu ed and Abdul Aziz is bo applications in the Des t Al-Sahuki and Karim ating and Publishing, 1	ehind Hilal. Mo sign and Analys a Muhammad V	sul University Press, sis of Experiments,
Main refe	erences (sou	urces)		The Internet in genera	al	
Recomme	ended bo	ooks and		Messages and theses,	ancient and mo	odern
reference	es (scientifi	ic journals,				
reports)					
Electronic	c Reference	es, Websites		Iraqi academic journa	ls, Research ga	ite, USGS

Remote sensing

2. Course Code:

RESE321

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1/4/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours (2) hours for the theoretical part and (3) hours for the practical part, the number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Prof. Dr. Dalshad Rasool Azeez

Email: <u>dr_dalshad@uokirkuk.edu.iq</u> Assist. Lecturer.Noorjan Essmat Noori essmat.noorjan@uokirkuk.edu.iq

8. Course Objectives

Course Objectives

Teaching the student the importance of satellite visuals in soil science studies and helping him to know the science of remote sensitization and its importance and what can be used from it with modern technological development in the fields of agriculture, soil and water.

9. Teaching and Learning Strategies

Strategy	The use of remote sensing technology and its applications in the fields of soil and
	water science, the student's knowledge of the basic concepts of remote sensing
	science - Knowledge of the types of satellites and sensors - How to analyze, interpret
	and deal with visuals - How to use applications for remote sensing in various fields
10	

10. Course Structure

Neek	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Cognitive	What is remote sensing (remote sensing)?	Lecture	Daily and monthly exam, attendance and reports
2	5	Cognitive	Electromagnetic radiation, electromagnetic field	Lecture	Daily and monthly exam, attendance and reports
3	5	Cognitive	Interaction with the atmosphere, interaction with targets	Lecture	Daily and monthly exam, attendance and reports
4	5	Cognitive	Positive and negative sensing	Lecture	Daily and monthly exam, attendance and reports
5	5	Cognitive	Visualization properties	Lecture	Daily and monthly exam, attendance and reports
6	5	Cognitive	Sensing from the ground, from the air and from space	Lecture	Daily and monthly exam, attendance and reports
7	5	Cognitive	Characteristics of satellites	Lecture	Daily and monthly exam, attendance and reports
8	5	Cognitive	Spatial resolution, cell size, scale, spectral clarity	Lecture	Daily and monthly exam, attendance and reports
9	5	Cognitive	Radimetric resolution, temporary/temporal resolution	Lecture	Daily and monthly exam, attendance and reports
10	5	Cognitive	Cameras & Aerial Photography	Lecture	Daily and monthly exam, attendance and reports
11	5	Cognitive	Multispectral scanning, thermal imaging	Lecture	Daily and monthly exam, attendance and reports
12	5	Cognitive	Geometric distortion in visuals	Lecture	Daily and monthly exam,

					attendance and reports
13	5	Cognitive	Elements of visual interpretation	Lecture	Daily and monthly exam, attendance and reports
14	5	Cognitive	Digital visual processing, visual enhancement	Lecture	Daily and monthly exam, attendance and reports
15	5	Cognitive	Classification and analysis of visualizations	Lecture	Daily and monthly exam, attendance and reports
0	ree of qua	ourse Evaluation	distributed (5) degrees for	daily preparation	participation
degrees	of practic	al monthly exams by tw	tical monthly exams by tw o monthly exams and the	final exam score	of (60%)
degrees	of practic ed (40) de	al monthly exams by tw	tical monthly exams by tw o monthly exams and the al part and (20) degrees fo	final exam score	of (60%)
degrees distribut 12.	of practic ed (40) de Le	al monthly exams by tw grees for the theoretica	itical monthly exams by two o monthly exams and the al part and (20) degrees fo ang Resources	final exam score r the practical pa red by the teach	s, and (10) of (60%) rt.

	DesktopK, authored by Dr. Omar Abdullah Ismail Al-Qassab.
Recommended books and references (scientific journals, reports)	Iraqi academic scientific journals, including Kirkuk University Journal of Agricultural Sciences
Electronic References, Websites	International magazines within Scopus containers

1. Course Name	:				
	Soil Salinity				
2. Course Code:					
	SOSA322				
3. Semester / Y	ear:				
	Second semester/third year				
4. Description I	Preparation Date:				
	31/3/2024				
5. Available Atte	endance Forms:				
Is mandatory	7				
	redit Hours (Total) / Number of Units (Total)				
(5) hours, (2) hour number of units (3)	rs for the theoretical part and (3) hours for the practical pa)				
	inistrator's name (mention all, if more than one name)				
Name: Assist	ant Professor Wael Fahmi Abdulrahman				
Email: waelfa	ahmi@uokirkuk.edu.iq				
8. Course Object	tives				
Course Objectives	${f 1}$ – Identify the problem of salinity and the nature of its treatment				
	or methods of living with it				
	2- Identify the ionic composition of salts				
	3- Identifying the salt phases of soils affected by				
	salinity				
	4– How to address this problem or methods of living				
	with it				
9. Teaching and	Learning Strategies				
soils 2- Er them 3- Er	nabling students to learn how to evaluate and characterize affected by salinity nabling students to know how to use these soils and exploit a for agriculture nabling students to know how to conduct the appropriate mation method				

Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	2+3	Show topic data word and Data Show	The problem of salinity and its impact on agricultural production	Calculator + Lectures	Daily questions + tests
2	2+3	Show topic data word and Data Show	Sources of salt components	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	Sources of salt components Soil formation conditions affected by salts.	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	Water and salt balance in the soil and its relationship to salinity.	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	Chemical and physical properties of salts accumulated in salt- affected soils	Calculator + Lectures	Daily questions + tests
6	Semester exam	Show topic data word and Data Show	Stages of salinization in soil.	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	Classification and naming of soils affected by salts.	Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	The effect of soil salinity on plant growth + salt tolerance of agricultural crop	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	First month exam.	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	Irrigation water quality.	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	Controlling soil salinity and ways to live with it.	Calculator + Lectures	Daily questions + tests
12	2+3	Show topic data word and Data Show	Reclamation of saline soils.	Calculator + Lectures	Daily questions + tests
13	Semester exam	Show topic data word and Data Show	Management of reclaimed soils.	Calculator + Lectures	Daily questions + tests
14	2+3	Show topic data word and Data Show	Results of some saline land reclamation experiments in Iraq.	Calculator + Lectures	Daily questions + tests
15	2+3	Show topic data word and Data Show	Second month exam	Calculator + Lectures	Daily questions + tests
11.	Course Eva				
Degree	s are award	ed for student partici	ons presented to then pation in scientific res d illustrations related	search and repo	orts
12.	Learning a	nd Teaching Resou	irces		
Require	d textboo	oks (currice 1- Soil	salinity - A. Dr Al	nmed Haider	Al-Zubaidi

books, if any)	 (1989). Ministry of Higher Education and Scientific Research - University of Baghdad. 2- Land reclamation-A. Dr Ahmed Haider Al-Zubai (1992). Ministry of Higher Education and Scientific Research - University of Baghdad.
Main references (sources)	The Internet in general
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern
Electronic References, Websites	Iraqi academic journals, Research gate, USGS

1. Course Name:

Soil Morphology

2. Course Code:

SOM0323

3. Semester / Year:

Second Semester / Third Year

4. Description Preparation Date:

1/4/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours (2) hours for the theoretical part and (3) hours for the practical part, the number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Prof. Dr. Dalshad Rasool Azeez

Email: <u>dr_dalshad@uokirkuk.edu.iq</u>

Assist. Lecturer.Noorjan Essmat Noori

essmat.noorjan@uokirkuk.edu.iq

8. Course Objectives

Course Objectives

Enable the student to characterize the soil in the field through morphological qualities that can be visually distinguished.

9. Teaching and Learning Strategies

Strategy	The emergence and development of the soil, the factors and processes of soil formation, the study of morphological soil characteristics, the possibility of recording morphological
	characteristics in real time without referring to the laboratory (in the field) such as: texture, construction, color, texture, etc., and the student can diagnose the morphological
	properties in the field, characterize them and how to document them in the morphological description form.

10. Course Structure

Week	Hours	Required	Unit or subject name	Learning	Evaluation method
		Learning		method	
		Outcomes			
1	5	Cognitive	The concept of soil morphology	Lecture	Daily and monthly exam, attendance and reports
2	5	Cognitive	Soil formation and development	Lecture	Daily and monthly exam, attendance and reports
3	5	Cognitive	Some concepts of soil morphology	Lecture	Daily and monthly exam, attendance and reports
141					

	1				
4	5	Cognitive	Weathering as a morphological factor, physical weathering	Lecture	Daily and monthly exam, attendance and reports
5	5	Cognitive	Chemical weathering	Lecture	Daily and monthly exam, attendance and reports
6	5	Cognitive	Soil formation / washing, removal,	Lecture	Daily and monthly exam, attendance and reports
7	5	Cognitive	Soil formation/calcification process, salinization	Lecture	Daily and monthly exam, attendance and reports
8	5	Cognitive	Soil Formation/Lateritalism, Podzolic/Gleying Reduction, Clay Collection Process	Lecture	Daily and monthly exam, attendance and reports
9	5	Cognitive	Soil composition factors: climate	Lecture	Daily and monthly exam, attendance and reports
10	5	Cognitive	Soil composition factors: material of origin	Lecture	Daily and monthly exam, attendance and reports
11	5	Cognitive	Soil composition factors: topography, biofactor, time	Lecture	Daily and monthly exam, attendance and reports
12	5	Cognitive	Main soil horizons	Lecture	Daily and monthly exam, attendance and reports
13	5	Cognitive	Secondary soil horizons	Lecture	Daily and monthly exam, attendance and reports
14	5	Cognitive	Soil Micromorphology - Characterization - Uses and Applications	Lecture	Daily and monthly exam, attendance and reports
15	5	Cognitive	Morphology and composition of Iraqi soils	Lecture	Daily and monthly exam, attendance and reports

11. Course Evaluation

The degree of quarterly pursuit of (40%) distributed (5) degrees for daily preparation, participation and reporting, and (25) degrees of theoretical monthly exams by two monthly exams, and (10) degrees of practical monthly exams by two monthly exams and the final exam score of (60%) distributed (40) degrees for the theoretical part and (20) degrees for the practical part.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Lectures prepared by the teacher based on relevant books		
	references.		
Main references (sources)	Dr. Walid Khaled Al-Akidi and Dr. Shaker Mahmoud Al-Issawi		
	1989. Soil morphology. Dr. Falah Abu Nuqta and Dr. Hassan		
	Suleiman Habib, Soil Survey and Classification.		
Recommended books and references	Iraqi academic scientific journals, including Kirkuk University		
(acientific inversele reporte)	Journal of Agricultural Sciences		
(scientific journals, reports)			
Electronic References, Websites	International magazines within Scopus containers		

1. Course Name:

Drainage

2. Course Code:

DRAI324

3. Semester / Year:

Second semester/third year

4. Description Preparation Date:

31/3/2024

Strategy

5. Available Attendance Forms:

Is mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours, (2) hours for the theoretical part and (3) hours for the practical part, numb of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Assistant Professor Wael Fahmi Abdulrahman

Email: waelfahmi@uokirkuk.edu.iq

8. Course Objectives

,	
Course Objectives	1- Preparing students who have the ability to use modern puncture methods
	and describe these methods accurately with the possibility of using them within
	Iraqi soil and integrating these methods with irrigation networks and getting rid
	of excess water.
	2- Entering the agricultural sector with distinguished efficiency through
	participation. In puncture projects, modern irrigation technologies, and the use
	of the best methods in order to reduce water use within agricultural lands,
	reduce the risk of salt and desertification, and remove excess water.
9. Teaching and	Learning Strategies

1- Enabling the student to learn how to evaluate and characterize modern puncture methods

2- - Enabling the student to know how to use digging nets for soil and to obtain the best methods and exploit them for agriculture
3- Enabling the student to know how to conduct the modern irrigation method and link it with the puncture system to achieve integration between the irrigation and puncture process
4- Using modern methods and training students on them

		movement of wa 6- Linking irrigation	tudents to use modern software and model the water towards the sewers rigation issues with the drainage system to achieve					
10. Course Structure								
Week	Hours	Required	Unit or subject name	Learning	Evaluation			
		Learning		method	method			
		Outcomes						
1	2+3	Show topic data word and Data Show	The concept of puncture, justifications for establishing punctures, the relationship of puncture to plant growth and productivity.	Calculator + Lectures	Daily questions + tests			
2	2+3	Show topic data word and Data Show	Physical soil properties related to drilling.	Calculator + Lectures	Daily questions + tests			
3	2+3	Show topic data word and Data Show	The hydrological cycle and the location of irrigation and drainage.	Calculator + Lectures	Daily questions + tests			
4	2+3	Show topic data word and Data Show	Water flow in the soil, its forms, and its relationship to the concept of drainage, flow analysis	Calculator + Lectures	Daily questions + tests			
5	2+3	Show topic data word and Data Show	Puncture and soil salinity, washing requirements and salt balance.	Calculator + Lectures	Daily questions + tests			
6	Semester exam	Show topic data word and Data Show	Investigations required to establish trocars, exploratory and design investigations.	Calculator + Lectures	Daily questions + tests			
7	2+3	Show topic data word and Data Show	Measurement of saturated water conductivity above and below the groundwater level.	Calculator + Lectures	Daily questions + tests			
8	2+3	Show topic data word and Data Show	Types of trocars, their classification, and the objectives of their construction.	Calculator + Lectures	Daily questions + tests			
9	2+3	Show topic data word and Data Show	First month exam.	Calculator + Lectures	Daily questions + tests			
10	2+3	Show topic data word and Data Show	Open trocars + covered trocars.	Calculator + Lectures	Daily questions + tests			
11	2+3	Show topic data word and Data Show	Incisive and vertical trocars.	Calculator + Lectures	Daily questions + tests			
12	2+3	Show topic data word and Data Show	Designs of open and covered puncture systems and calculation of distances between trocars.	Calculator + Lectures	Daily questions + tests			
13	Semester exam	Show topic data word and Data Show	Mechanization of trocars and supplies for implementing trocars.	Calculator + Lectures	Daily questions + tests			
14	2+3	Show topic data word and Data Show	Maintenance of open and covered trocars.	Calculator + Lectures	Daily questions + tests			
15	2+3	Show topic data word and Data Show	Second month test	Calculator + Lectures	Daily questions + tests			

11. Course Evaluation				
Daily and monthly tests through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports Student activities by creating posters and illustrations related to the academic subject				
12. Learning and Teaching Resources				
Required textbooks (curricular books, if any)	1- Inspection, investigations, designs, implementation and maintenance. Writte by Dr. Mohsen Muhareb Al-Lami and Dr. Alaa Saleh Al-Janabi. 1991.			
Main references (sources)	The Internet in general			
Recommended books and references (scientific journals, reports)	Messages and theses, ancient a modern			
Electronic References, Websites	Iraqi academic journals, Resear gate, USGS			

1. Course Name:							
	Soil minerals						
2. Co	2. Course Code:						
2 50		Vaam	SOMI325				
5. Se	mester /		ond semester/	third year			
4 De	scrintio	n Preparation Date:	unu semester/	uni u year			
4. D(scriptio		31/03/202	24			
5. Av	vailable	Attendance Forms:	01,00,201				
			Mandator	ry			
6. Ni	umber of	f Credit Hours (Total)		•			
		(5) H	Hours, Number	of units (3)			
7. Co	ourse ad	ministrator's name (m	ention all, if n	nore than one na	me)		
Na	ame: Ass	ist .Prof. Dr. dhahir kha	aleel Ali Emai	l: <u>dhahirgeo@uol</u>	kirkuk.edu.iq		
	ourse Ob	<u> </u>					
		ns to raise the level of		•	soil minerals and its		
		nd the mineralogical and		perties.			
		and Learning Strategie		· · · ·			
		n about the soil mineral	-	rgue question and	auditory with visual		
clearne	ess suppo	orting by real examples.					
10. C	ourse St	ructure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method		
1	5	Introduction to soil minerals and its importance ,soil sources	knowledge	Lecture+practice	Daily and monthly exam, attendance and reports		
2	5	The weathering and minerals	knowledge	lecture+practice	Daily and monthly exam, attendance and reports		
3	5	Soil minerals , light and heavy minerals	knowledge	lecture+practice	Daily and monthly exam, attendance and reports		
4	5	Silicate minerals and structure	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports		
5	5	Neasosilicate and sorosilicate minerals	knowledge	lecture+practice	Daily and monthly exam, attendance and reports		
6	5	Cyclosilicate and Inosilicate minerals	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports		
7	5	Phylosilicate and	knowledge	lecture+practice	Daily and monthly		
			146				

		Tectosilicate minerals			exam, attendance and reports
8	5	Clay minerals and its structure, 1:1 minerals	knowledge	lecture+practice	Daily and monthly exam, attendance and reports
9	5	1:2 clay minerals and its properties	Knowledge,	lecture+practice	Daily and monthly exam, attendance and reports
10	5	2:2clay minerals and its properties	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
11	5	Principle of clay minerals classification	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
12	5	Clay minerals formation sources	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
13	5	Mechanism of clay minerals from silicates	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
14	5	The clay minerals negative charge sources	Knowledge,	lecture+practice	Daily and monthly exam, attendance and reports
15	5	Polysubstitution in clay minerals	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports

11.Course Evaluation

The grade for the semester examination is (40%), divided into (5) grades for classroom activity, (20) grade for semi semester test,(15) grade for practice test, the final exam is (60%).

12.Learning and Teaching Resources

Required textbooks (curricular books, if any .

Main references (sources)	Soil minerals .Eissa ,S.K ,Baghdad university p
Recommended books and references	Iraqi and international academic scientific
(scientific journals, reports)	journals
Electronic References, Websites	International journals included in Scopus

	1. Course Name:						
Economics of natural resources							
2. Course Code:							
		ECNA	326				
3. Se	mester /	Year:					
		Secon	nd semester/thi	rd year			
4. De	escription	n Preparation Date:					
			31/03/2024				
5. Av	v ailable A	Attendance Forms:					
			Mandatory				
6. Nu	umber of	Credit Hours (Total) /	Number of Uni	ts (Total)			
		(3) Ho	ours, Number of	units (3)			
		ninistrator's name (mei	,				
Na	me: Ass	ist .Prof. Dr. dhahir khale	el Ali Email: d	lhahirgeo@1	iokirkuk.edu.iq		
8. Co	ourse Ob	jectives					
		ns to raise the level of		-	-		
classifi	ication of	f natural resources and wa	ater supply with	demands an	d that affected factors.		
9. Te	aching a	nd Learning Strategies					
Oral discussion about the natural resources economics subject and argue question and							
auditory clearness supporting by real examples.							
				s subject a	nd argue question and		
auditor	ry cleari	ness supporting by real ex					
auditor	ry cleari ourse Sti	ness supporting by real ex ructure	kamples.				
auditor	ry cleari	ness supporting by real ex ructure Required Learning	tamples. Unit or	Learning	Evaluation method		
auditor	ry cleari ourse Sti	ness supporting by real ex ructure Required Learning Outcomes	kamples.		Evaluation method		
auditor	ry cleari ourse Sti	ness supporting by real ex ructure Required Learning	tamples. Unit or	Learning	Evaluation method Daily and monthly exam,		
auditor 10. Co Week	ry clearn ourse Str Hours	ness supporting by real ex ructure Required Learning Outcomes Concept importance and	tamples. Unit or subject name	Learning method	Evaluation method		
auditor 10. Co Week 1	ry clearn ourse Str Hours 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water	tamples. Unit or subject name knowledge	Learning method	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week	ry clearn ourse Str Hours	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations	tamples. Unit or subject name	Learning method Lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. C Week 1	ry clearn ourse Str Hours 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water	tamples. Unit or subject name knowledge	Learning method Lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week 1 2 3	ry clearn ourse Str Hours 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources	knowledge knowledge	Learning method Lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2	ry clearn ourse Str Hours 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water	tamples.	Learning method Lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4	ry clearn ourse Str Hours 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply	knowledge knowledge knowledge knowledge	Lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week 1 2 3	ry clearn ourse Str Hours 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply	knowledge knowledge	Learning method Lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4	ry clearn ourse Str Hours 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the	knowledge knowledge knowledge knowledge	Lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week 1 2 3 4 5 6	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors	knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4 5	ry clearn ourse Str Hours 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors Water resources uses and	knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week 1 2 3 4 5 6 7	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors	xamples. Unit or subject name knowledge knowledge knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4 5 6	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors Water resources uses and demands	xamples. Unit or subject name knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam,		
auditor 10. Co Week 1 2 3 4 5 6 7 8	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors Water resources uses and demands The form of water resources demands The earth and its	xamples. Unit or subject name knowledge knowledge knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4 5 6 7	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors Water resources uses and demands The form of water resources demands The earth and its properties	xamples. Unit or subject name knowledge knowledge knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports		
auditor 10. Co Week 1 2 3 4 5 6 7 8	ry clearn ourse Str Hours 3 3 3 3 3 3 3 3 3 3 3	ructure Required Learning Outcomes Concept importance and classification of natural resources Economic and water resources relations The obstacles in water resources Water resources supply economics The roles of technology in water resources supply Water demands and the affected factors Water resources uses and demands The form of water resources demands The earth and its	xamples. Unit or subject name knowledge knowledge knowledge knowledge knowledge knowledge knowledge knowledge	Learning method Lecture lecture lecture lecture lecture lecture lecture	Evaluation method Daily and monthly exam, attendance and reports		

· · · · · · · · · · · · · · · · · · ·					1		
11	3	The models and samples	Kn	owledge	lecture	Daily and monthly exam,	
11	5	urban area structure	Knowledge		lecture	attendance and reports	
10	3	Berjs centric sectors	IZ.	17 1 1	1	Daily and monthly exam,	
12	3	sample of urban area	Kn	lowledge	lecture	attendance and reports	
10	2	Homer hot sectors of city	17		1 .	Daily and monthly exam,	
13	3	plans	Kn	lowledge	lecture	attendance and reports	
1.4	2		17		1 /	Daily and monthly exam,	
14	3	Britain city plans of city	Kn	owledge	lecture	attendance and reports	
		The correlation between				Deiles and menthles are m	
15	3	different samples of the	Kn	Knowledge	lecture	Daily and monthly exam,	
		cities		C		attendance and reports	
11.Co	ourse Ev	aluation					
The gra	ade for	the semester examination	is (4	10%), divid	led into (10) grades for classroom	
activity	, (30)gi	ade for semi semester tes	t, the	final exan	n is (60%).		
		and Teaching Resources					
	0	ooks (curricular books, if					
10094110			uiij)	•			
Main re	eference	s (sources)		The natural resources economics .Al-samaray,H. A 199 the natural			
					resources economics		
Recom	Recommended books and references			Iraqi and	internationa	l academic scientific	
(scienti	fic jourr	nals, reports)		journals			
Electro	nic Refe	erences, Websites		Internati	onal journal	ls included in Scopus	

Course Description Form				
1. Course Name:				
English language /3				
2. Course Code:				
ENLA327				
3. Semester / Year:				
Second semester/ third year				
4. Description Preparation Date:				
31/03/2024				
5. Available Attendance Forms:				
Mandatory				
6. Number of Credit Hours (Total) / Number of Units (Total)				
1 hour				
7. Course administrator's name (mention all, if more than one name)				
Name: Berevan Qader Omar Email: beree.omer@gmail.com				
8. Course Objectives				

Teaching this curriculum aims to make the student familiar with the English language as it is a global language from which the student will benefit widely in his academic life. This curriculum is an extension of what the student learned in the first and second stages.

9. Teaching and Learning Strategies

It is a semi-integrated curriculum for the pre-intermediate level, which includes the necessary basics for learning the English language for the pre-intermediate level, along with exercises. It includes interrogative articles and four types of verb tenses, with an explanation of each tense in the form of the affirmative, negative, and question. It also includes how to Expressing quantities, articles, and indefinite in the English language, comparative and superlative adjectives, and identifying verb forms in the English language.

10. Course Structure						
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method	
1	1	Question words	Knowledge	lecture	Exercise	
2	1	Present simple for pre- intermediate level	Knowledge	lecture	Exercise	
			150			

3	1	Present continuous for pre- intermediate level	Kn	owledge	lecture	Exercise
4	1	Past simple for pre- intermediate level	Kn	owledge	lecture	Exercise
5	1	Past continuous for pre- intermediate level	Kn	owledge	lecture	Exercise
6	1	Expression of quantity	Kn	owledge	lecture	Quiz
7	1	Articles	Kn	owledge	lecture	Exercise
8	1	Comparative and superlative		owledge	lecture	Exercise
9	1	Have to	Kn	owledge	lecture	Exercise
10	1	Introduction to modal auxiliary verbs	Kn	owledge	lecture	quiz
11	1	Should	Kn	owledge	lecture	quiz
12	1	Must	Kn	owledge	lecture	Exercise
13	1	Verb pattern 1	Kn	owledge	lecture	Exercise
14	1	Verb pattern 2	Kn	owledge	lecture	Exercise
15	1	Irregular verbs	Kn	owledge	lecture	Quiz
11.Co	ourse Ev	aluation				
Semest	ter endea	vor (40 marks): 15 mark 15 mark	ks for		onth exam +	5 marks for quiz 5 marks for quiz
12.Le	earning a	and Teaching Resources	5	-		
Required textbooks (curricular books, if any)					by : John	elementary student boo and Liz Soars / Oxfo
Main r	eferences	s (sources)		Cambridg	re nress	
		books and references				
		als, reports)		My Engli	sh library w	ebsite
		rences, Websites		You tub	e and some	useful websites
		·				

1. Course Name:

Soil Survey And Classification

2. Course Code:

SOSU411

3. Semester / Year:

First Semester / Fourth Year

4. Description Preparation Date:

1/4/2024

5. Available Attendance Forms:

Mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours (2) hours for the theoretical part and (3) hours for the practical part, the number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Prof. Dr. Dalshad Rasool Azeez Email: <u>dr_dalshad@uokirkuk.edu.iq</u> Assist. Lecturer.Noorjan Essmat Noori

essmat.noorjan@uokirkuk.edu.iq

8. Course Objectives

Course Objectives

The student's understanding of the concept of survey, its importance, pillars, grades, how to implement it, understanding the methods and foundations of soil taxonomy, and studying the philosophical systems of soil classification and the method of its formation in some countries, especially in the United States of America

9. Teaching and Learning Strategies

Strategy Study the types of soils spread in the world through the forms of surveys followed and the approved classification systems obtained from laboratory analyzes and field studies, Enable the student, after receiving the course, to distinguish the types of soils and prepare their maps

10. Course Structure							
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method		
1	5	Cognitive	Definition of soil survey, types of soil maps	Lecture	Daily and monthly exam, attendance and reports		
2	5	Cognitive	Types of soil survey	Lecture	Daily and monthly exam, attendance and reports		
3	5	Cognitive	Orders of the soil survey	Lecture	Daily and monthly exam, attendance and reports		
4	5	Cognitive	General introduction to taxonomy, evolution of soil taxonomy, evolution of soil taxonomy in the United States, genetic system	Lecture	Daily and monthly exam, attendance and reports		
5	5	Cognitive	Definition of soil classification, importance of soil classification, rules	Lecture	Daily and monthly exam, attendance and reports		
6	5	Cognitive	(Soil taxonomy) orders,: Histosols entisols, , inceptisols	Lecture	Daily and monthly exam, attendance and reports		
7	5	Cognitive	(Soil taxonomy system) Spodosols،Alfisols، vertisols	Lecture	Daily and monthly exam, attendance and reports		
8	5	Cognitive	، (Soil taxonomy system) Ultisols) Oxisols Gelisols	Lecture	Daily and monthly exam, attendance and reports		
9	5	Cognitive	(Soil taxonomy system) Mollisois, Aridisols,Andisols	Lecture	Daily and monthly exam, attendance and reports		
10	5	Cognitive	(Soil taxonomy system) sub order	Lecture	Daily and monthly exam, attendance and reports		
11	5	Cognitive	great group	Lecture	Daily and monthly exam,		

						attendance and reports
12	5	Cognitive	sub	group	Lecture	Daily and monthly exam, attendance and reports
13	5	Cognitive	fa	amily	Lecture	Daily and monthly exam, attendance and reports
14	5	Cognitive		About the World Soil Classification (WRB)		Daily and monthly exam, attendance and reports
15	5	Cognitive		w of the types of d in the world	Lecture	Daily and monthly exam, attendance and reports
The deg and repo degrees	11. Course Evaluation The degree of quarterly pursuit of (40%) distributed (5) degrees for daily preparation, participation and reporting, and (25) degrees of theoretical monthly exams by two monthly exams, and (10) degrees of practical monthly exams by two monthly exams and the final exam score of (60%)					
distribut 12.			eoretical part an Feaching Res	d (20) degrees for t ources	the practical p	art.
Required textbooks (curricular books, if any)				Lectures prepared books and referen		her based on relev
Required textbooks (curricular books, if any) Main references (sources)			Al-Akaidi, Walid K Classification Ped Kutub for Printing Mosul, Iraq. Al-M Muhaimeed. (199 Classification Di Printing and Publ	ology. Directo g and Publishin ashhadani, Ah 4). Soil Survey rectorate of D	orate of Dar Al- ng, University of med Saleh v and	

Recommended	books	and	references	Iraqi academic scientific journals, including Kirkuk University Journal of Agricultural Sciences
(scientific journals	s, reports.)		University Journal of Agricultural Sciences
Electronic Refere	nces, We	bsites		International magazines within Scopus containers

1. Course Name:

Soil & Water Conservation

2. Course Code:

SOCO412

3. Semester / Year:

First semester/Forth year

4. Description Preparation Date:

31/3/2024

5. Available Attendance Forms:

Is mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours, (2) hours for the theoretical part and (3) hours for the practical part number of units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Wael Fahmi Abdulrahman Email: waelfahmi@uokirkuk.edu.iq

8. Course Objectives

Course Objectives

9. Teaching and Learning Strategies

Strategy

- 1- Preparing qualified agricultural cadres to use scientific programs that contribute to improving the quality and quantity of production
 - Agricultural Production .

2- Follow up on the performance of graduates in the field of work and the extent to which graduates' specifications match the market need and extent Implementing and applying what has been studied in the field of work.

Neek	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1		Show topic data word and Data Show	Introduction	Calculator + Lectures	Daily questions + tests
2		Show topic data word and Data Show			Daily questions + tests
3		Show topic data word and Data Show	Run _ Off +Rainfall data analysis	Calculator + Lectures	Daily questions + tests
4		Show topic data word and Data Show	Run _ Off + Rational Method	Calculator + Lectures	Daily questions + tests
5		Show topic data word and Data Show	Type of water erosion + Curve Number Method	Calculator + Lectures	Daily questions + tests
6	Semester exam	Show topic data word and Data Show	Semester exam	Calculator + Lectures	Daily questions + tests
7		Show topic data word and Data Show	Water erosion mechanics	Calculator + Lectures	Daily questions + tests
8		Show topic data word and Data Show	Erosion and soil productivity	Calculator + Lectures	Daily questions + tests
9		Show topic data word and Data Show	Water erosion control + USLE	Calculator + Lectures	Daily questions + tests
10		Show topic data word and Data Show	Wind erosion mechanics	Calculator + Lectures	Daily questions + tests
11		Show topic data word and Data Show	Wind erosion mechanics + Slide 12and Film show	Calculator + Lectures	Daily questions + tests
12		Show topic data word and Data Show	Wind erosion control	Calculator + Lectures	Daily questions + tests
13	Semester exam	Show topic data word and Data Show	Semester exam	Calculator + Lectures	Daily questions + tests
14		Show topic data word and Data Show	Erosion and pollution	Calculator + Lectures	Daily questions + tests
15		Show topic data word and Data Show	Economic and social application of soil conservation	Calculator + Lectures	Daily questions + tests
11.	Course	Evaluation			
Degrees a	re awarded	0 1	s presented to them or ion in scientific resear lustrations related to	rch and reports	:

Required textbooks (curricular books any)	 Al-Tayef, Nabil Ibrahim 1991. Soil and water conservation. Ministry of Higher Education and Scientific Research, Univers of Baghdad Ismail, Laith Khalil, 1985. Soil Conservation. Ministry of Higher Education and Scientific Research. University of Mosul Nineveh. translator. Al-Ani, Abdel Fattah Abdullah, 1987. Soil Conservation. Ministry of Higher Education and Scientific Research. Technic Institutes Foundation. Baghdad. Fahd, Ali Abd. 1984. Soil and Water Conservation Engineering. Ministry of Higher Education and Scientific Research. University of Baghdad. Baghdad. Translated.
Main references (sources)	The Internet in general
Recommended books and references (scientific journals, reports)	Messages and theses, ancient and modern
Electronic References, Websites	Iraqi academic journals, Research gate, USGS

	Course Description Form									
47.C	ourse Na	ame:								
	Soil Microbiology									
48. C	48.Course Code:									
			SOMI413							
49.S	emester	/ Year:								
		/firs	st semester/Fourth year							
50.D	escriptio	on Preparation Date:								
			03/04/2024							
51.A	vailable	Attendance Forms:								
			Mandatory							
52.N	umber o	f Credit Hours (Total) /]	Number of Units (Total)							
			lours, Number of units (3)							
			ntion all, if more than one							
N	ame: Dr	. kawther hkeem ibraheim	Email: microbiology_197	5@uokirku	k.edu.iq					
54.C	ourse O	bjectives								
The co	ourse ain	ns to raise the level of stud	lents' knowledge about the	soil microb	piology projects					
and h	ow to o	listinguish between them	practically and culturing	with acknow	owledging how					
charac	cterizatio	n laboratory.doil microbi	ology id the study of m	icroorganis	m in soil their					
		now they effects soil prope	erties							
		and Learning Strategies								
Verba	l comm	inication with students, un	rging them to work togeth	er in the le	arning process,					
•			I	well as the	Verbal communication with students, urging them to work together in the learning process, using written communication skills to increase comprehension, as well as the brainstorming					
		nethod to attract students' attention, activate the thinking strategy according to the student's								
•	ability, and conduct scientific visits to agricultural projects.									
56. Course Structure										
56. C		nduct scientific visits to ag	0 07		to the student's					
56. C Week		nduct scientific visits to ag tructure Required Learning	0 07	Learning	to the student's Evaluation					
	Course S	nduct scientific visits to ag	pricultural projects.		to the student's Evaluation method					
	Course S	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology	unit or subject name	Learning	to the student's Evaluation method Daily and					
Week	Course S Hours	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect	Unit or subject name	Learning method	to the student's Evaluation method					
	Course S	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology	Unit or subject name Introduction and the historical development of soil	Learning method Lecture& practicall y using	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making					
Week	Course S Hours	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect	Unit or subject name	Learning method Lecture& practicall	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes					
Week	Course S Hours	nduct scientific visits to ag Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists	Unit or subject name Introduction and the historical development of soil microbiology	Learning method Lecture& practicall y using	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion					
Week	Course S Hours	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil	Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers	Learning method Lecture& practicall y using	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and					
Week	Course S Hours	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its	Unit or subject name Introduction and the historical development of soil microbiology	Learning method Lecture& practicall y using lab	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam,					
Week 1	Fourse Strength of the second	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations	Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and	Learning method Lecture& practicall y using lab lecture&p	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and					
Week 1	Fourse Strength of the second	nduct scientific visits to ag Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type	Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters	Learning method Lecture& practicall y using lab lecture&p ractically	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam,					
Week 1	Fourse Strength of the second	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type Soil	Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters - introduces the overall	Learning method Lecture& practicall y using lab lecture&p ractically using lab	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and					
Week 1 2	Sourse Similar Hours 5 5	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type soil microbiology governs	Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters - introduces the overall physical and chemical properties of soil	Learning method Lecture& practicall y using lab lecture&p ractically using lab	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and reports Daily and monthly exam,					
Week 1	Fourse Strength of the second	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type soil microbiology governs nutrient processing and	Unit or subject name Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters - introduces the overall physical and chemical properties of soil particulates controlling	Learning method Lecture& practicall y using lab lecture&p ractically using lab lecture&p ractically	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and attendance and					
Week 1 2	Sourse Similar Hours 5 5	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type Soil microbiology governs nutrient processing and recycling in soil, and	Unit or subject name Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters - introduces the overall physical and chemical properties of soil particulates controlling the development of	Learning method Lecture& practicall y using lab lecture&p ractically using lab	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and reports Daily and monthly exam,					
Week 1 2	Sourse Similar Hours 5 5	nduct scientific visits to ag tructure Required Learning Outcomes - Introduction to soil microbiology - Know general aspect of soil microbiology Know the important scientists contributed in development of microbiology - How to classifying soil layers with its characterizations each type soil microbiology governs nutrient processing and	Unit or subject name Unit or subject name Introduction and the historical development of soil microbiology The classification of soil layers with chemical ,physical and biological characters - introduces the overall physical and chemical properties of soil particulates controlling	Learning method Lecture& practicall y using lab lecture&p ractically using lab lecture&p ractically	to the student's Evaluation method Daily and monthly exam, attendance and reports- Making quizzes - Discussion Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and					

associated microbial activity. associated microbial activity. associated microbial activity. 4 5 Structure of bacteria components The soil environment consists of a variety of physical factors that affect the abundance and diversity of microbes found in the soil knowledge Lecture.w orking in lab as group Daily and monthly exam, attendance and group 5 5 Classification of bacteria Classification of family.class.order.genus Lecture working in lab as group Daily and monthly exam, attendance and group 6 5 History.Classification of fung Intensive study fungi.structure.nutrition .physiology Lecture working in lab as group Daily and monthly exam, attendance and reports 7 5 History.Classification of algac Intensive study fungi.structure.nutrition .physiology Lecture group Daily and monthly exam, attendance and reports 9 5 History.Classification of algac Intensive study fungi.structure.nutrition .physiology.classification for protozoa Lecture baily and monthly exam, attendance and reports 10 5 Protozoa in soil Factores on microorganism of humus and effects on biodgedation Lecture working in lab as group Daily and monthly exam, attendance and reports 11 5 Viruses in soil Protozoa in so					
acidity, thereby impacting soil fertility and crop health. The soil environment consists of a variety of physical, biological and chemical factors that affect the abundance and diversity of microbes found in the soil knowledge Daily and monthly exam, attendance and reports 5 5 Classification of bacteria Classification of family, class, order, genus of fung Lecture working in lab as group Daily and monthly exam, attendance and reports 6 5 Classification of fung Intensive study fungi.structure, nutarition .physiology Lecture working in lab as group Daily and monthly exam, attendance and reports 7 5 History, Classification of yeast Intensive study fungi.structure, nutrition .physiology Lecture working in lab as group Daily and monthly exam, attendance and reports 8 5 History, Classification of algae Intensive study fungi.structure, nutrition .physiology Lecture working in lab as group Daily and monthly exam, attendance and reports 9 5 History, Classification of protozoa Intensive study fungi.structure, nutrition .physiology, classification fay elstification, skill Lecture working in lab as group Daily and monthly exam, attendance and reports 10 5 Protozoa in soil Factores on microorganism of humus and effects on biodegedation Lecture working in lab as group		-			
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45Structure of bacteria componentsconsists of a variety of physical, biological and chemical factors that affect the abundance and diversity of microbes found in the soil knowledgeLecture. w orking in lab as groupDaily and monthly exam, attendance and group55Classification of bacteriaClassification of bacteria depending on family, class, order, genusLecture working in lab as groupDaily and monthly exam, attendance and reports65History, Classification of fungIntensive study fungi.structure, nutrition , physiologyLecture working in lab as groupDaily and monthly exam, attendance and reports75History , Classification of yeastIntensive study fungi.structure, nutrition , physiologyLecture working in lab as groupDaily and monthly exam, attendance and reports85History , Classification of protozoaIntensive study fungi.structure, nutrition , physiologyLecture working in lab as groupDaily and monthly exam, attendance and reports95History , Classification of protozoaIntensive study fungi.structure, nutrition , physiology classification physiologyLecture working in lab as groupDaily and monthly exam, attendance and reports105Protozoa in soilIntensive study fungi.structure, nutrition , physiology, classification forbiozoa, KiellLecture working in lab as groupDaily and monthly exam, attendance and reports11 <td></td> <td></td> <td>The soil environment</td> <td></td> <td></td>			The soil environment		
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65History,Classification of fungIntensive study fungi.structure,nutartion ,physiologyworking in lab as groupmonthly exam, attendance and reports75History,Classification of yeastIntensive study fungi.structure,nutrition ,physiologyLecture working in lab as groupDaily and monthly exam, attendance and group85History,Classification of algaeIntensive study fungi.structure,nutrition ,physiologyLecture working in lab as groupDaily and monthly exam, attendance and group95History,Classification of protozoaIntensive study fungi.structure,nutrition ,physiology classification, Knowledge, skillLecture working in lab as groupDaily and monthly exam, attendance and reports105Protozoa in soilIntensive study fungi.structure,nutrition ,physiology, classification killLecture working in lab as groupDaily and monthly exam, attendance and reports115Soil HumusFactores on microorganism composition and elements of humus and effects on biodegedationLecture working in lab as groupDaily and monthly exam, attendance and group125Viruses in soilViruses consist of RNA and DNA molecules within protein coats. Viral particles are metabolically in lab as groupDaily and monthly exam, attendance and group125Viruses in soilViruses consist of RNA and DNA molecules within protein coats. Viral particles are metabolically in lab	5 5		depending on	working in lab as	monthly exam, attendance and
75History ,Classification of yeastIntensive study fungi.structure,nutrition ,physiologyLecture 	6 5	•	fungi.structure,nutartion	working in lab as	monthly exam, attendance and
85History ,Classification of algaeIntensive study fungi.structure,nutrition ,physiologyworking 	7 5	-	fungi.structure,nutrition	working in lab as	monthly exam, attendance and
95History ,Classification of protozoaIntensive study fungi.structure,nutrition ,physiology 	8 5	-	fungi.structure,nutrition	working in lab as	monthly exam, attendance and
105Protozoa in soilprotozoa structure, nutrition , physiology, classification Knowledge, skillworking in lab as 	9 5	•	fungi.structure,nutrition ,physiology classification,Knowledge,	Lecture working in lab as	monthly exam, attendance and
115Soil HumusFactores on microorganism composition and elements of humus and effects on biodegedationLecture working in lab as groupDaily and monthly exam, attendance and reports125Viruses in soilViruses consist of RNA and DNA molecules within protein coats. Viral particles are metabolically 	10 5	Protozoa in soil	protozoa.structure,nutrition ,physiology,classification	working in lab as	monthly exam, attendance and
125Viruses in soilViruses consist of RNA and DNA molecules within protein coats. Viral particles are metabolically inert and do not carry out respiratory or biosyntheticLecture working 	11 5	Soil Humus	Factores on microorganism composition and elements of humus and effects on	Lecture working in lab as	Daily and monthly exam, attendance and
	12 5	Viruses in soil	Viruses consist of RNA and DNA molecules within protein coats. Viral particles are metabolically inert and do not carry out respiratory or biosynthetic functions	Lecture working in lab as	Daily and monthly exam, attendance and
159			159		

(scientific journals, reports) 160							
		books and references	Web sites of Microbiology				
			DOI:10.1002/9781119114314 John Wiley & Sons, Inc. Whitman,		۱©		
Main references (sources)			Print ISBN:9780470311103 C		1119114314		
			First published:30 September 2020				
			Author(s):Robert L. Tate				
arry)			books and references. Soil Microbiology				
any)	ireu textb	ooks (curricular books, if	Lectures prepared by the teacher based on relevant books and references.				
		and Teaching Resources		too abor boo	ad on relevant		
			es, and the grade for the fir	al exam is ((60%).		
			ng reports, (30) grades for				
•	0		ion is (40%), divided in				
57.0	Course E	valuation	prijotom	I	I		
			the biological, chemical, and physical				
			foundation for considering				
		Damaged Soils	damaged soil systems specifically. It provides a	group	reports		
15	5	5 Soil Microbes: Optimizers of Soil System Sustainability and Reparation of	systems in general and	in lab as	attendance and		
15	5		and sustainability of soil	working	monthly exam,		
			microbial community for maximizing the productive	Lecture	Daily and		
			of management of the				
			presents a capstone analysis of the importance				
			their fate in the soil system				
			explains that the diversity of organic chemicals and	group	reports		
14	5	Biogeochemical Cycles	used in the study. It	in lab as	attendance and		
14	5	Introduction to the	nutrients and the processes	working	monthly exam		
			held in common by organisms producing the	Lecture	Daily and		
			examines the relationships				
			unique portion of the soil ecosystem.				
			factors which make it an				
		osphere	the rhizosphere and those	group	reports		
13	5	The Rhizosphere/Mycorrhiz	properties of the microbial processes occurring within	in lab as	attendance and		
13	F		elucidation of the	working	Daily and monthly exam,		
			overall objective of	Lecture			
			rhizosphere/mycorrhizosph ere properties with the				
			presents an analysis of rhizosphere/mycorrhizosph				

Course Description Form					
1. Course Nar	ne:				
	Soil-Water-Plant Relationships				
2. Course Code:					
SOPL414					
3. Semester / Year:					
	first semester /fourth year				
4. Description	n Preparation Date:				
	31/3/2024				
5. Available A	Attendance Forms:				
Is mandato	•				
	Credit Hours (Total) / Number of Units (Total)				
(5) hours, (2) ho of units (^۲)	urs for the theoretical part and (3) hours for the practical part, numb				
7. Course ad	ministrator's name (mention all, if more than one name)				
	neerah Faydhllah MOHAMED				
	_70@uokirkuk.edu.iq				
8. Course Obj					
Course Objectives	 The relationship of soil, water and plants is a science that seeks to identify and identify the basic concepts of the relationship of soil, water and plants Identify the salt balance between the soil-plant-atmosphere system and how this affects Physiological processes and plant growth. The various stresses to which the plant is exposed and how to alleviate those stresses. The relationship of organic matter and microorganisms in plant growth The relationship between soil salinity and its effect on plant growth, root growth and absorption 				
9. Teaching and Learning Strategies					
to ch le th	Brainstorming Thinking strategy according to the student's ability, for example (if the student is able o learn analysis methods, he will acquire skill in linking knowledge of the soil's nemical and physical properties and fertility. Critical Thinking strategy in learning, which is a term that symbolizes the highest vels of thinking, which aims to pose a problem and then analyze it logically to reach he desired solution.3- Conduct daily and monthly examinations and prepare practical eports				

		Required Learning	Unit or subject	Learning	
Week	Hours	Outcomes	name	method	Evaluation metho
		Water, its properties	Introduction to the	Evaluation and	
		and functions, the	planned experiments	Explanation and display of	
1	2+3	physical properties of	and preparing their	pictures and	Examination
		the soil and their effect on plant growth	supplies	Lecture	
		Water, its properties			
		and functions, the	Comparing the	Explanation and	
2	2+3	physical properties of	development and growth	display of	Examination
-		the soil and their effect	of roots in soils of	pictures and	
		on plant growth	different textures	Lecture	
		Chemical properties of			
		soil and their effect on	Study of bulk density	Explanation and	
3	2+3	plant growth and the	and its effect on plant	display of	Examination
C		relationship of water	growth	pictures and	
		content to soil water potential	growth	Lecture	
		Chemical properties of			
		soil and their effect on		Explanation and	
4	2+3	plant growth and the	The effect of salinity on	display of	Examination
4	2+3	relationship of water	root development	pictures and	Examination
		content to soil water		Lecture	
		potential			
		Water and water		Explanation and	
5	2+3	potential in the soil-	Nutrient preparation and	display of	Examination
5	2+3	plant-air system and the use of mathematical	plant behaviour	pictures and	Examination
		models		Lecture	
		Water and water		E-aleration and	
		potential in the soil-	Evaporation and	Explanation and display of	
6	2+3	plant-air system and the	transpiration	pictures and	Examination
		use of mathematical	measurements	Lecture	
		models		Englagetion and	
		The various stresses to which the plant is	Calculate the water	Explanation and display of	
7	2+3	exposed and stress	needs of the plant	pictures and	Examination
		relief	needs of the plant	Lecture	
		The various stresses to	Follow up on	Explanation and	
8	2+3	which the plant is	experiments and take	display of	Examination
0	213	exposed and stress	-	pictures and	Examination
		relief	notes	Lecture	
		The various stresses to	Follow up on	Explanation and	
9	2+3	which the plant is exposed and stress	experiments and take	display of pictures and	Examination
		relief	notes	Lecture	
		The relationship of	Follow up on	Explanation and	
10	2+3	organic matter and soil	experiments and take	display of	Examination
10	2+3	microbiota to plant	-	pictures and	Examination
		growth	notes	Lecture	
		The relationship of	Follow up on	Explanation and	
11	2+3	organic matter and soil	experiments and take	display of	Examination
		microbiota to plant growth	notes	pictures and Lecture	
		Salinity and its effect		Explanation and	
12	2+3	on plant growth, root	Discussing related	display of	Examination

		13growth and function, efficiency of water use by the plant and influencing factors.	pres	arch and how to ent results and aphical forms	pictures and Lecture	
13	2+3	Salinity and its effect on plant growth, root growth and function, efficiency of water use by the plant and influencing factors.	preser	nalyzing and nting results and riting reports	Explanation and display of pictures and Lecture	Examination
14	2+3	, Salinity and its effect on plant growth, root growth and function, efficiency of water use by the plant and influencing factors		s the results with all groups	Explanation and display of pictures and Lecture	Examination
15		Examination	E	Examination	Examination	Examination
Da Pa sul	bject					ated to the academic
12. l	_earning a	nd Teaching Resou	irces			
Required textbooks (curricular books, if any)			y)	ء والنبات. جامعة الموصل.	. علاقة التربة بالما	النعيمي، سعد لله نجم. ٩٩٠
Main references (sources)						
	nended bool , reports…)	ks and references (sci	ientific		Science Society (y Genesis.	Of America
Electron	ic Reference	es, Websites		Iraqi ad	cademic journals	, Research gate, US

		Co	ourse Descrip	tion Form		
1.	Course I		, ,			
Hydrology and water resources 2. Course Code:						
2. Course Code: HYWA415						
3. Semester / Year:						
			rst semester/f	ourth year		
4. De	escriptio	n Preparation Date:				
			31/03/20)24		
5. Av	vailable .	Attendance Forms:				
<			Mandate	4		
6. Ni	imber of	<u>f Credit Hours (Total)</u>		· · · · ·		
7 C			Hours, Numbe	· · /	mo)	
		ministrator's name (m sist .Prof. Dr. dhahir kh				
	ourse Ob			m. unamigeo@uo	KIIKuK.Cuu.IY	
		is to raise the level of s	students' know	vledge about the h	vdrology and surface	
		tion, evaporation, tran		-		
	* *	–	±			
9. Teaching and Learning Strategies Oral discussion about the hydrology and water resources subject and argue question and						
Oral of	discussio	n about the hydrology	and water res	ources subject and	d argue question and	
		n about the hydrology isual clearness support		•	d argue question and	
audito	ry with v	isual clearness support		•	d argue question and	
audito		isual clearness support		amples.		
auditor	ry with v	isual clearness support	ting by real exa Unit or subject	•	d argue question and Evaluation method	
auditor 10. Co Week	ry with v ourse St Hours	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and	ting by real exa Unit or subject name	amples.	Evaluation method Daily and monthly	
auditor	ry with v ourse St	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean	ting by real exa Unit or subject	amples.	Evaluation method Daily and monthly exam, attendance and	
auditor 10. Co Week	ry with v ourse St Hours	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and	ting by real exa Unit or subject name	amples.	Evaluation method Daily and monthly	
auditor 10. Co Week	ry with v ourse St Hours	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water	ting by real exa Unit or subject name	amples.	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and	
auditor 10. C Week 1	ry with v ourse St Hours 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation	ting by real exactly unit or subject name knowledge	amples. Learning method Lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports	
auditor 10. C Week 1 2	ry with v ourse St Hours 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and	ting by real exactly the second secon	amples. Learning method Lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly	
auditor 10. C Week 1	ry with v ourse St Hours 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses	ting by real exactly unit or subject name knowledge	amples. Learning method Lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly	
auditor 10. C Week 1 2 3	ry with v ourse St Hours 5 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and infiltration	ting by real exactly the second secon	Image: second system Image: second system	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly	
auditor 10. C Week 1 2	ry with v ourse St Hours 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and	ting by real exactly the second secon	amples. Learning method Lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports	
auditor 10. C Week 1 2 3	ry with v ourse St Hours 5 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and infiltration The stream variety	ting by real exactly the second secon	amples. Learning method Lecture+practice lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports	
auditor 10. C Week 1 2 3	ry with v ourse St Hours 5 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and infiltration The stream variety The flood and its	ting by real exactly the second secon	amples. Learning method Lecture+practice lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly	
auditor 10. C Week 1 2 3 4	ry with v ourse St Hours 5 5 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and infiltration The stream variety	ting by real exa Unit or subject name knowledge knowledge knowledge Knowledge	amples. Learning method Lecture+practice lecture+practice lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports	
auditor 10. C Week 1 2 3 4	ry with v ourse St Hours 5 5 5 5	isual clearness support ructure Required Learning Outcomes Hydrologic cycle and sea an ocean distribution precipitation ,evaporation and water losses The runoff and infiltration The stream variety The flood and its	ting by real exa Unit or subject name knowledge knowledge knowledge Knowledge	amples. Learning method Lecture+practice lecture+practice lecture+practice lecture+practice	Evaluation method Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports Daily and monthly exam, attendance and reports	

	r				
7	5	The water balance	knowledge	lecture+practice	Daily and monthly exam, attendance and hereports
8	5	Factor affecting runoff	knowledge	lecture+practice	Daily and monthly exam, attendance and reports
9	5	The hydrograph and its uses	Knowledge,	lecture+practice	Daily and monthly exam, attendance and reports
10	5	Water reservoirs	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
11	5	The groundwater and its soureces	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
12	5	Groundwater movements	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
13	5	Well drilling	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
14	5	Stream curves and input calculations	Knowledge,	lecture+practice	Daily and monthly exam, attendance and reports
15	5	The water pollution	Knowledge	lecture+practice	Daily and monthly exam, attendance and reports
11.C	ourse Ev	valuation			

11.Course Evaluation

The grade for the semester examination is (40%), divided into (5) grades for classroom activity, (20) grade for semi semester test, (15) grade for practice test, the final exam is (60%).

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any	
Main references (sources)	Applied Hydrology. 1978. Ray K. Linsley et al.
Main references (sources)	New York. USA.
Recommended books and references	Iraqi and international academic scientific
(scientific journals, reports)	journals
Electronic References, Websites	International journals included in Scopus

1. Course Nam					
	Irrigation Technology Systems				
2. Course Code	2:				
IRTE416					
3. Semester / Year:					
	First semester/Fourth year				
4. Description	Preparation Date:				
	3/4/2024				
5. Available At	tendance Forms:				
Is mandator	у				
6. Number of C	Credit Hours (Total) / Number of Units (Total)				
(5) hours, (2) hou number of units (3	urs for the theoretical part and (3) hours for the practical pa				
7. Course adn	ninistrator's name (mention all, if more than one name)				
Name: Profe	essor Dr. Hussain Thahir Tahir				
Email: <u>huss</u>	ain.tahir@uokirkuk.edu.ig				
8. Course Obje	ctives				
Course Objectives	1- The student will be familiar with the types of modern irrigation				
	technologies.				
	2- The student should determine the importance of these systems from				
	an economic standpoint.				
	3- The student should distinguish between the quality of these				
	systems.				
9. Teaching an	d Learning Strategies				
	The student must have the ability to choose the appropriate ystem according to the available capabilities.				
	The student must have the ability to perform the				
	measurements required to evaluate irrigation systems. 3- To implement the knowledge and skills he has learned in hi				
	ractical life.				
-	Enabling students to use modern software and model				
	rigation movement.				

		Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1	2+3 Show topic data word and Data Show and Data Show Show topic data word and Data Show times. Calculator + Lectures		Daily questions + tests		
2	2+3	Show topic data word and Data Show	Irrigation water sources. Irrigation water quality.	Calculator + Lectures	Daily questions + tests
3	2+3	Show topic data word and Data Show	Introduction to modern irrigation systems, irrigation and water resources in Iraq.	Calculator + Lectures	Daily questions + tests
4	2+3	Show topic data word and Data Show	Modern irrigation technologies and soil salinization.	Calculator + Lectures	Daily questions + tests
5	2+3	Show topic data word and Data Show	Characteristics of irrigated soil, irrigation water classification systems, and washing requirements.	Calculator + Lectures	Daily questions + tests
6	Semester exam	Show topic data word and Data Show	Water quality and suitability for irrigation.	Calculator + Lectures	Daily questions + tests
7	2+3	Show topic data word and Data Show	Different irrigation methods (traditional irrigation systems) and modern irrigation technologies.	Calculator + Lectures	Daily questions + tests
8	2+3	Show topic data word and Data Show	Water needs of crops when using modern irrigation systems.	Calculator + Lectures	Daily questions + tests
9	2+3	Show topic data word and Data Show	Drip irrigation, moisture distribution pattern in the soil under a drip irrigation system, hydraulic drippers.	Calculator + Lectures	Daily questions + tests
10	2+3	Show topic data word and Data Show	Sprinkler irrigation system, advantages and disadvantages of sprinkler irrigation, classification of sprinkler irrigation methods	Calculator + Lectures	Daily questions + tests
11	2+3	Show topic data word and Data Show	Operating the sprinkler irrigation system and how to maintain it.	Calculator + Lectures	Daily questions + tests
12	2+3	Show topic data word and Data Show	Center pivot irrigation, device components, advantages and disadvantages of the system, calculation of pressure needs.	Calculator + Lectures	Daily questions + tests
13	Semester exam	Show topic data word and Data Show	The Iraqi experience in irrigation technologies, irrigation technology development project.	Calculator + Lectures	Daily questions + tests

14		Show topic data word and Data Show	irriga terms	parison of field tion systems in of efficiency and roductivity.	Calculator + Lectures	Daily questions + tests
15		Show topic data word and Data Show	Seco	nd month exam	Calculator + Lectures	Daily questions + tests
11. (Course Eva	aluation				
Degrees Student	Daily and monthly tests through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports Student activities by creating posters and illustrations related to the academic subject 12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			 Modern irrigation technologies and other topics in water resources. 2010 Dr Issam Khudair Al-Hadithi and Dr. Ahmed Madloul Al-Kubaisi and Dr. Ya Khudair Al-Hadithi. 			
Main ref	ferences (so	urces)		The Ir	nternet in ger	neral
Recommended books and references (scientific journals, reports)			ientific	Messages and theses, ancient a modern		
Electronic References, Websites			Iraqi academic journals, Resear gate, USGS			

1. Course Name:

Soil Management And Land Use

2. Course Code:

SOMA421

3. Semester / Year:

second semester /fourth year

4. Description Preparation Date:

3/4/2024

5. Available Attendance Forms:

Is mandatory

6. Number of Credit Hours (Total) / Number of Units (Total)

(5) hours, (2) hours for the theoretical part and (3) hours for the practical part number of units (3)

- 7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee
 - Email: <u>Hanansalah@uokirkuk.edu.iq</u>
- 8. Course Objectives

,	
Course Objectives	Enabling the student to know the problems
Enabling the student to know the relationship betw	Iraqi soil
soil classification and land classification, knowing	Enabling the student to prepare the
types of lands and their relationship to agricultu	administrative program and the administrativ
production, and knowing the general conditions of pl	map
production and their relationship to soil management	
0 Teaching and Learning Strategies	

9. Teaching and Learning Strategies

Strategy						
	A A- Cognitive objectives					
	A1- For the student to become familiar with soil management					
	A2- The student should differentiate between soil and land					
	management					
	A3- Increasing the student's knowledge of how to evaluate					
	lands					
	A4- Knowing the most important problems of Iraqi soil					
	A5- Enabling the student to know the problems of Iraqi soil					
	B- The program's skill objectives					
	B1 - How to employ soil specializations to serve the issue of					
	soil management					
	B2 - Increasing the student's knowledge of how to evaluate					
	lands					
	B3 - Increasing the student's knowledge of different land us					

10. Course Structure								
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method			
1,2	2+3	Show topic data word and Data Show	The relationship between pedological sciences and soil management	Calculator + Lectures	Daily questions + tests			
3,4	2+3	Show topic data word and Data Show	Surveying and classification tasks in administration	Calculator + Lectures	Daily questions + tests			
5,6	2+3	Show topic data word and Data Show	Land classification	Calculator + Lectures	Daily questions + tests			
6,7	2+3	Show topic data word and Data Show	Land evaluation	Calculator + Lectures	Daily questions + tests			
8,9	2+3	Show topic data word and Data Show	Land uses	Calculator + Lectures	Daily questions + tests			
10,11	2+3	Show topic data word and Data Show	Agricultural courses	Calculator + Lectures	Daily questions + tests			
12,13	2+3	Show topic data word and Data Show	Administrative programme	Calculator + Lectures	Daily questions + tests			
14,15	2+3	Show topic data word and Data Show	Administrative programme	Calculator + Lectures	Daily questions + tests			

11. Course Evaluation

Daily and monthly tests through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports Student activities by creating posters and illustrations related to the academic subject

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Soil Management and Land Use 1990, written by Dr. Wa Khaled Al-Akidi
Main references (sources)	. Soil management in planning and land uses 1999, wri by Dr. Muhammad Khader Abbas
Recommended books and references (scientific	Messages and theses, ancient a
journals, reports)	modern
Electronic References, Websites	

Course Description Form					
1. Course Name:					
	Desertification				
2. Course Code:					
	DESE422				
3. Semester / Year	r:				
	second semester /fourth year				
4. Description Pre	eparation Date:				
	31/3/2024				
5. Available Attend	dance Forms:				
Is mandatory					
6. Number of Cred	lit Hours (Total) / Number of Units (Total)				
	or the theoretical part and, number of units (2)				
7. Course admini	strator's name (mention all, if more than one name)				
	ah Faydhllah MOHAMED				
Email: soil_70@	ouokirkuk.edu.iq				
8. Course Objective	es				
 Course Objectives Desertification studies the environmental degradation of the Earth It includes fragile ecosystems and their impact on the expansion of desertifier Researches drought, its causes, and the general consequences of drought Knowledge of sand dunes and the origin and mineral composition of sand desertification and the used to stop the movement of sand dunes Know the concept of water harvesting, the benefits of water harvesting systems, and the design of water harvesting systems. 					
9. Teaching and Le	earning Strategies				
ab so • (lev res	Brainstorming Thinking strategy according to the student's ability, for example (if the student is ole to learn analysis methods, he will acquire skill in linking knowledge of the oil's chemical and physical properties and fertility. Critical Thinking strategy in learning, which is a term that symbolizes the highest vels of thinking, which aims to pose a problem and then analyze it logically to each the desired solution.3- Conduct daily and monthly examinations and repare practical reports				
I					

Neek	Hours	Required Learning Outcomes	Unit or	Learning	Evaluation
			subject	method	method
			name		
		Introduction to the concept of	desertification	Explanation and	
1	2	desertification and terminology related to desertification		display of pictures and Lecture	Examination
2	2	The problem of desertification, description of the forms of desertification and its causes. Spectacles	desertification	Explanation and display of pictures and Lecture	Examination
3	2	Desertification, its risks, and the losses resulting from it. Desertification globally, Arably, and locally	desertification	Explanation and display of pictures and Lecture	Examination
4	2	Origin of desertification. Vegetation, salinity, drought	desertification	Explanation and display of pictures and Lecture	Examination
5	2	Combat Desertification. Agriculture and permaculture. Water resources and combating desertification, administrative positions in cultural and civil management, land reclamation	desertification	Explanation and display of pictures and Lecture	Examination
6	2	Sand dunes as a manifestation of desertification. Area distribution of sand dunes locally and their spread globally.	desertification	Explanation and display of pictures and Lecture	Examination
7	2	The origin of the sand dune problem. Sand dunes and sand dunes. Methods and means of stabilizing and combating sand dunes	desertification	Explanation and display of pictures and Lecture	Examination
8	2	Means and methods for measuring desertification and sand dunes. Erosion measurement. Measuring the ability of soil to be removed. Measuring loss and addition	desertification	Explanation and display of pictures and Lecture	Examination
9	2	Drought and aridity. Definition of drought and aridity and the factors causing them.	desertification	Explanation and display of pictures and Lecture	Examination
10	2	Results of drought and aridity. Ways to live with drought	desertification	Explanation and display of pictures and Lecture	Examination
11	2	Global Warming. The concept of global warming.	desertification	Explanation and display of pictures and Lecture	Examination
12	2	Causes of global warming. Some methods of treating retention	desertification	Explanation and display of pictures and Lecture	Examination
13	2	Water harvesting. Water harvesting concept. Water harvesting methods.	desertification	Explanation and display of pictures and Lecture	Examination
14	2	Factors that determine the choice of harvesting methods	desertification	Explanation and display of pictures and Lecture	Examination
15	2	the exam	Examination	Examination	Examination

11. Course Evaluation

Daily and monthly tests

Participate by asking questions that are models of scientific discussions related to the academic subject

Submissions activities through new work and scientific reports

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	صحر . تدهور الاراضي في المناطق الجافة. تاليف د. محمد عبد ــــــــــــــــــــــــــــــــــ
Main references (sources)	حر تأليف دبماجد خضير عباس و دعبد الأمير ــ1-1) صالح ، ٢٠١٢ وزارة التعليم العالي والبحث العلمي ــ جامعة بغداد
Recommended books and references (scientific	Iraqi academic journals, Research gate.
journals, reports…)	
Electronic References, Websites	Soil Science Society Of America
	Library Genesis

2. Co		lame:								
	urse Co		1. Course Name:							
	urse Co	Plant Nutrition								
3. Sei	2. Course Code: PLNU423									
	3. Semester / Year:									
	Second semester/Fourth year									
4. Description Preparation Date:										
31/03/2024										
5. Available Attendance Forms:										
	1 0		Mandatory							
6. Nu	mber of	Credit Hours (Total) / (5) U								
7 Co	urse adr	(5) HC ninistrator's name (mer	ours, Number of	× /	name)					
		t.Prof. Dr. Ali Mohamme	,		•					
	urse Ob			<u> </u>						
		s to introduce the studen	t to the characte	eristics of p	lant nutrients and their					
		he physiological and stru		-						
9. Tea	aching a	nd Learning Strategies								
		cture method and use mo	odern presentatio	on methods.						
		oratory experiments.								
	-	ue with students through	•							
	nework a ourse Sti	ssignments (writing scier	ntific reports).							
10. CO	Jurse Su	Required Learning	Unit or	Learning						
Week	Hours	Outcomes	subject name	-	Evaluation method					
1	5	Definition of plant nutrition and plant content of elements	knowledge	lecture	Daily and monthly exam, attendance and reports					
2	5	Soil as a medium for nutrients	knowledge	lecture	Daily and monthly exam, attendance and reports					
3	5	Absorption of nutrients and theories of absorption	knowledge	lecture	Daily and monthly exam, attendance and reports					
4	Representation of elements and knowledge Daily and monthly exam									
5	Representation of elements and knowledge Daily and monthly exam									
6	5	Representation of elements and their transport within the plant	knowledge	lecture	Daily and monthly exam, attendance and reports					
7	5	Water, plant nutrition, and the relationship between nutrition and yield	knowledge	lecture	Daily and monthly exam, attendance and reports					
8	5	Water, plant nutrition, and the relationship between nutrition and yield	knowledge	lecture	Daily and monthly exam, attendance and reports					
	5	Salinity and plant nutrition	knowledge	lecture	Daily and monthly exam,					

					attendance and reports		
10	5	Nutrition and plant diseases	knowledge	lecture	Daily and monthly exam,		
10	5		Kilowieuge	lecture	attendance and reports		
11	11 5 Nutrition and gut diseases know		knowledge	lecture	Daily and monthly exam,		
11	5	diseases	kilowiedge	lecture	attendance and reports		
12	5	Symptoms of element deficiency	knowledge	lecture	Daily and monthly exam,		
12		•			attendance and reports		
13	5	Pollution and plant nutrition	knowledge	lecture	Daily and monthly exam,		
		<i>a</i>			attendance and reports		
14	5	Soilless agriculture	knowledge	lecture	Daily and monthly exam,		
			5		attendance and reports		
15	5	How to prepare nutritional solutions	knowledge	lecture	Daily and monthly exam,		
11.0	11.Course Evaluation				attendance and reports		
The gr	The grade for the semester examination is			livided into	(10) grades for daily		
prepara	ation, par	rticipation, and submitting	g reports, (30) g	grades for m	onthly exams, with two		
monthl	y exams	for each exam (15) grade	es, and the grade	e for the fina	ll exam is (60%).		
		and Teaching Resources					
D	. 1 1		Lectures	Lectures prepared by the teacher based on			
Require	Required textbooks (curricular books, if any)			relevant books and references.			
Main re	Main references (sources)			Plant Nutrition			
				Iraqi academic scientific journals, including			
Recom	Recommended books and references						
(scienti	(scientific journals, reports)			Kirkuk University Journal of Agricultural			
-				Sciences			
Electro	nıc Refe	erences, Websites	Internatio	International journals included in Scopus			

Fertilizers Technology 2. Course Code: FETE424 3. Semester / Year: Second semester/Fourth year 4. Description Preparation Date: 3/4/2024 5. Available Attendance Forms: Is mandatory 6. Number of Credit Hours (Total) / Number of Units (Total) (5) hours, (2) hours for the theoretical part and (3) hours for the practical pumber of units (3) 7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee Email: : Hanansalah@uokirkuk.edu.iq 8. Course Objectives Course Objectives It examines the sources of fertilizers, whether organic or chemical, and their types. It also examines the types of nitrogen fertilizers, their uses, classification, and manufacturing. 9. Teaching and Learning Strategies Strategy A- Cognitive objectives A1- The student gets to know the concept of fertilizer technology A2- The student should describe the types of fertilizers A3- The student should describe the types of fertilizers A3- The student should describe the types of fertilizers A3- The student should describe the types of literatizers A3- The student can distinguish between different fertilizers B1 - That the student can distinguish between different fertilizers B1 - That the student can distinguish between different fertilizers B1 - That the student can distinguish between different fertilizers B2 - To know the relationship of each fertilizer to the plant B3 - To know the environmental effects of using each fertilizer 10. Course Structure	1. Course Name:							
2. Course Code: FETE424 3. Semester / Year: Second semester/Fourth year 4. Description Preparation Date: 3/4/2024 5. Available Attendance Forms: Is mandatory 3/4/2024 6. Number of Credit Hours (Total) / Number of Units (Total) (5) hours, (2) hours for the theoretical part and (3) hours for the practical pumber of units (3) 7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee Email: : Hanansalah@uokirkuk.edu.iq 8. Course Objectives It examines the sources of fertilizers, whether organic or chemical, and their types. It also examines the types of nitrogen fertilizers, their uses, classification, and manufacturing. 9. Teaching and Learning Strategies Strategies A - Cognitive objectives A - The student should describe the types of fertilizer technology A2- The student should classification, and manufacturing. 9. Teaching and Learning skill objectives B - The program's skill objectives B - The program's skill objectives B - The her prote mais skill objectives								
FETE424 3. Semester / Year: Second semester/Fourth year 4. Description Preparation Date: 3/4/2024 5. Available Attendance Forms: Is mandatory 6. Number of Credit Hours (Total) / Number of Units (Total) (5) hours, (2) hours for the theoretical part and (3) hours for the practical pumber of units (3) 7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee Email: : Hanansalah@uokirkuk.edu.iq 8. Course Objectives It examines the sources of fertilizers, whether organic or chemical, and their types. It also examines the types of nitrogen fertilizers, their uses, classification, and manufacturing. 9. Teaching and Learning Strategies Strategy A- Cognitive objectives A1- The student gets to know the concept of fertilizer technology A2- The student should describe the types of fertilizer A4- Every fertilizer must be chemically analyzed A5- To know how to add each fertilizer A4- Every fertilizer M4- Every fertilizer must be chemically analyzed A5- To know the reactions of fertilizers in the soil B - The program's skill objectives B1 - That the student can distinguish between different fertilizers B2 - To know the relationship of each fertilizer to the plant B3 - To know the environmental effects of using each fertilizer 10. Course Structure Unit or subject name Learning method Week Hours Required Learning Unit or subject name Learning method								
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5. Available Attendance Forms: Is mandatory 6. Number of Credit Hours (Total) / Number of Units (Total) (5) hours, (2) hours for the theoretical part and (3) hours for the practical pumber of units (3) 7. Course administrator's name (mention all, if more than one name) Name: Hanan Salah Mahdee Email: : Hanansalah@uokirkuk.edu.iq 8. Course Objectives It examines the sources of fertilizers, whether organic or chemical, and their types. It also examines the types of nitrogen fertilizers, their uses, classification, and manufacturing. 9. Teaching and Learning Strategies Strategy A- Cognitive objectives A1- The student gets to know the concept of fertilizer technology A2- The student should describe the types of fertilizer A4- Every fertilizer must be chemically analyzed A5- To know how to add each fertilizer A6- To know the reactions of fertilizers in the soil B - The program's skill objectives B1 - That the student can distinguish between different fertilizers B2 - To know the environmental effects of using each fertilizer 10. Course Structure Week Hours Required Learning Outcomes Unit or subject name Method Evaluation method	4. Descrip	tion Prepar	ation Dat	e:				
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Email: : Hanansalah@uokirkuk.edu.iq 8. Course Objectives It examines the sources of fertilizers, whether organic or chemical, and their types. It also examines the types of nitrogen fertilizers, their uses, classification, and manufacturing. 9. Teaching and Learning Strategies Strategy A- Cognitive objectives A1- The student gets to know the concept of fertilizer technology A2- The student should describe the types of fertilizers A3- The student should know how to make every fertilizer A4- Every fertilizer must be chemically analyzed A5- To know how to add each fertilizers in the soil B - The program's skill objectives B1 - That the student can distinguish between different fertilizers B2 - To know the relationship of each fertilizer to the plant B3 - To know the environmental effects of using each fertilizer 10. Course Structure Week Hours Required Learning Outcomes Learning method Evaluation						e fiame)		
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Week Hours Required Learning Outcomes Unit or subject name method Learning method Evaluation	B3 - To know the environmental effects of using each fertilizer							
Week Hours Outcomes Unit or subject name method method method	10. Course Structure							
Outcomes method method	Maal	Required	Learning		Learning	Evaluation		
Identify the different	vveek Hours		omes	Unit or subject name	method	method		
types of forfilizors in				Modern concepts	Colculator	Daily question-		
1,2 4+6 terms of shape, color, related to refullizers Lectures + tests	1,2 4+6	terms of sl	hape, color,			Daily questions + tests		
crystallization and 176		crystalliz	zation and	and their uses				

		analysis			
3	3+2	Conduct some laboratory analyzes to determine the solubility, pH, salt index, and nutrient ratios of different fertilizers.	Fertilizer classification	Calculator + Lectures	Daily questions + tests
4	3+2	Carrying out a field experiment or pot experiment to identify the plant's response to different fertilizer sources or fertilizer levels	organic fertilizers	Calculator + Lectures	Daily questions + tests
5	3+2	Detection of biuret in urea	Mineral fertilizers: Nitrogen fertilizers, their uses, classification and manufacturing	Calculator + Lectures	Daily questions + tests
6	3+2	Fertilizer calculations	Phosphorous fertilizers, their uses, classification and manufacturing	Calculator + Lectures	Daily questions + tests
7	Semester exam	Show topic data word and Data Show	Potassium fertilizers, their uses, classification and manufacturing	Calculator + Lectures	Daily questions + tests
8	3+2	Show topic data word and Data Show	Calcium, magnesium and sulfur fertilizers	Calculator + Lectures	Daily questions + tests
9	3+2	Show topic data word and Data Show	Compound fertilizers, their uses, classification and manufacturing	Calculator + Lectures	Daily questions + tests
10	3+2	Show topic data word and Data Show	Micronutrient fertilizers and chelated fertilizers, their uses and manufacturing	Calculator + Lectures	Daily questions + tests
11	3+2	Show topic data word and Data Show	Liquid fertilizers, preparation methods	Calculator + Lectures	Daily questions + tests

				and uses Methods of adding	~	
12	3+2	Show topic data word and Data Show		fertilizers	Calculator + Lectures	Daily questions + tests
				Evaluation of		
13	3+2	Show topic data and Data Sho		mineral and organic	Calculator + Lectures	Daily questions + tests
				fertilizers		
				Fertilizer		
				recommendations and		
14	3+2	Show topic data and Data Sho		optimal methods for	Calculator + Lectures	Daily questions + tests
				an ideal fertilizer		
				recommendation		
				Fertilizers and		
۱5	3+2	Show topic data word and Data Show		environmental	Calculator + Lectures	Daily questions + tests
				pollution		
11.	Course Ev	aluation				
				ons presented to them o		
		by creating post		pation in scientific resea		
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	Learning a	nd Teaching	Resou			
	ed textbool	-	1- Ali, and T Bagho 2- Has Latif A Minist Bagho	Irces Nour al-Din Shawqi, 20 heir Uses, College of Agr lad. (under publication) ssan, Nouri Abdel Qader Al-Ithawi, 1990. Soil fert try of Higher Education lad University.	iculture, Univ , Hassan Al-D ility and fertil and Scientific	Technologies versity of ulaimi, and izers, Research.
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	Course Description Form
1. Course Na	ime:
	Land Reclamation
2. Course Co	de:
	LARE425
3. Semester	1
	Second semester/Fourth year
4. Descriptio	on Preparation Date:
	3/4/2024
	Attendance Forms:
Is mandat	f Credit Hours (Total) / Number of Units (Total)
	nours for the theoretical part and (3) hours for the practical part, number
of units (3)	fours for the theoretical part and (5) hours for the practical part, nume
7. Course a	dministrator's name (mention all, if more than one name)
	nan Salah Mahdee
	anansalah@uokirkuk.edu.iq
8. Course Ob	ojectives
Course Objectives	For the student to recognize the problem of soil
	salinity and its impact on agricultural production.
	For the student to recognize the problem of soil
~	salinity and its impact on agricultural production.
9. Teaching a	and Learning Strategies
Strategy	A Cognitive objectives
	A- Cognitive objectives A1- The student will understand the conditions and factors that
	lead to soil salinization, as well as the sources and theories of
	salinization
	A2- The student should recognize the types of salts accumulated
	in the soil
	A3- The student will learn about the effect of salinity on plant growth and its relationship to agricultural production
	A4- The student will learn how to implement saline soil
	reclamation programs
	B - The program's skill objectives
	B1 - Analysis and diagnosis of salinity indicators in the field and
	laboratory. B2 - The ability to analyze soil data obtained in the field and
	B2 - The ability to analyze soil data obtained in the field and
	179

laboratory

B3 - How to plan and implement various soil reclamation programsB4- Obtaining soil salinity and soil data and applying it to determi the relative yield

10. Course Structure

Mosk	Hours	Required Learning	Unit or subject	Learning	Evaluation
Week	Hours	Outcomes	name	method	method
1	1 4+6 Experimenting with the effect of salinity on seed germination pr		The problem of salinity and its impact on agricultural production: the problem of salinity in the world, the problem of salinity in Iraq, the problem of salinity and agricultural production.	Calculator + Lectures	Daily questions + tests
2	2+3	Experimenting with the effect of salinity on wheat growth in the greenhouse.	Sources of salt components: sources of salts in nature and their accumulation in soils affected by salts, weathering of rocks and minerals, seas and oceans, volcanoes, means and mechanisms of transfer of salts to the soil.	Calculator + Lectures	Daily questions + tests
3	2+3	Carrying out a field experiment or pot experiment to identify the plant's response to different fertilizer sources or fertilizer levels	Formation conditions of soils affected by salts: Dissolution of accumulated salts in saline soil Phases of salt accumulation in saline soils	Calculator + Lectures	Daily questions + tests
4	2+3	Methods of expressing soil salinity	Cycles of salt	Calculator + Lectures	Daily questions + tests

			accumulation in			
			nature and their			
			relationship to the			
			formation of soils			
			affected by salts.			
			Water and salt			
		Determination of	balance in the soil			
5	2+3	dissolved ions in soil and water extract using	and its	Calculator + Lectures	Daily questions + tests	
		the elution method	relationship to			
			salinity			
			Chemical and			
		Determination of	physical			
6	Semester exam	dissolved ions by the optical flame method	properties of salts	Calculator + Lectures	Daily questions + tests	
	CAUIII		accumulated in			
			salt-affected soils			
	2+3	2+3 Conduct an experiment on soil salinization	Phases of salt			
7			accumulation in	Calculator + Lectures	Daily questions + tests	
			saline soils			
			Cation exchange			
		Conducting saline soil analyses	in soils affected			
8	2+3		by salts	Calculator + Lectures	Daily questions + tests	
			The effect of soil			
			salinity on plants			
			Experimental			
			relationship			
			between the			
9	2+3	Show topic data word and Data Show	sodium adsorption	Calculator + Lectures	Daily questions + tests	
			rate and the			
			percentage of			
			sodium exchanged			
			Ways to express			
10	2+3	Show topic data word	salinity and the	Calculator +	Deily questions 1 to 11	
10	273	and Data Show	effect of soil	Lectures	Daily questions + tests	
			salinity on plants			

11 2+3 Show topic data word and Data Show Classification and naming of soils affected by salts, salinity maps, and classification of soils affected by salts in Iraq Calculator + Lectures Daily questions + tests 12 2+3 Show topic data word and Data Show The effect of irrigation water types on soil and plants Calculator + Lectures Daily questions + tests 13.14 6+4 Show topic data word and Data Show The dangers of salinity and ways to live with it Calculator + Lectures Daily questions + tests 15 Semester exam Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 11 Course Evaluation Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 12 Let use through questions presented to them on the subject studied Degrees are awarded for student participation in scientific research and reports Daily questions + tests 11. Course Evaluation Evaluations related to the academic subject Daily questions + tests 12. Learning and Teaching Resources Book on agricultural land reclamation, Ahmed Haider Al-Zubaidi. Daily questions + tests 13. Main references (sources) Image: Calculator + Lectures Daily questions + tests	11 2+3 Show topic data word and Data Show naming of soils affected by salts, salinity maps, and classification of soils affected by solls, salts in Iraq Calculator + Lectures Daily questions + tests 12 2+3 Show topic data word and Data Show The effect of irrigation water types on soil and plants Calculator + Lectures Daily questions + tests 13.14 6+4 Show topic data word and Data Show The dangers of salinity to the soil, controlling salinity and ways to live with it Calculator + Lectures Daily questions + tests 15 Semester exam Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 11 Course Evaluation Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 12 2.4.3 Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 13.14 6+4 Show topic data word and Data Show Semester exam Calculator + Lectures Daily questions + tests 15 Semester exam Calculator + Lectures Daily questions + tests Daily questions + tests 11. Course Evaluation Semester exam Calculator + Lectures <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
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Course Description Form							
1. Course Name:							
English language / 4							
2. Course Code:							
ENLA426							
3. Semester / Year:							
Second semester/ fourth year							
4. Description Preparation Date:							
31/03/2024							
5. Available Attendance Forms:							
Mandatory							
6. Number of Credit Hours (Total) / Number of Units (Total)							
1 hour							
7. Course administrator's name (mention all, if more than one name)							
Name: Berevan Qader Omar Email: beree.omer@gmail.com							
8. Course Objectives							

Teaching this curriculum aims to make the student familiar with the English language as it is a global language from which the students will benefit widely in their academic life. This curriculum is an extension of what the students learned in the previous three stages.

9. Teaching and Learning Strategies

It is a semi-integrated curriculum for the intermediate level, which includes the necessary basics for learning the English language for the intermediate level, along with exercises. It includes auxiliary verbs and four types of verb tenses, with an explanation of each tense in the form of the affirmative, negative, and question. It also includes an introduction to the modal verbs regarding permission, Obligation and how to make offer and request, as well as an introduction to the future tense.

10. Course Structure									
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method				
1	1	Introduction to modal auxiliary verbs	Knowledge	lecture	Exercise				
2	1	Tenses and auxiliary	Knowledge	lecture	Exercise				

	verbs								
3	1	Negative and auxiliary verbs	Kn	owledge	lecture	Exercise			
4	1	Question and auxiliary verbs	Kn	owledge	lecture	Exercise			
5	1	Present simple for intermediate level	Kn	owledge	lecture	Exercise			
6	1	Present continuous for intermediate level	Kn	owledge	lecture	Quiz			
7	1	Past simple for intermediate level	Kn	owledge	lecture	Exercise			
8	1	Past continuous for intermediate level	Kn	owledge	lecture	Exercise			
9	1	Modal verbs	Kn	owledge	lecture	Exercise			
10	1	Modal verbs of obligation and permission	Knowledge		lecture	quiz			
11	1	Should, ought to , must	Kn	owledge	lecture	quiz			
12	1	Making request	Kn	owledge	lecture	Exercise			
13	1	Making offers	Kn	owledge	lecture	Exercise			
14	1	Introduction to future	Kn	owledge	lecture	Exercise			
15	1	Future with facts and predictions	Kn	owledge	lecture	Quiz			
11.C	ourse Ev	aluation							
Semes	ter endea	vor (40 marks): 15 mark				-			
		15 mark				5 marks for quiz			
				l exam (60	marks)				
12.L	earning a	and Teaching Resources	5	[
				New headway plus (elementary student bo					
Requir	red textbo	ooks (curricular books, if	/ written by : Liz and John Soars / Oxf						
			university press						
Main r	eference	s (sources)		Cambridg	ge press				
	Recommended books and references (scientific journals, reports)				sh library w	ebsite			
	-	erences, Websites		You tube and some useful websites					
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