Course Description Form

1. Course Name:

Agriculture Technology Transferred

2. Course Code:

AGTT255

3. Semester / Year:

The second spring semester / 2023-2024

4. Description Preparation Date:

1 / 2 / 2024

5. Available Attendance Forms:

My presence

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

2 theoretical / 2 units

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

Name: roaa mohammed hamid
Email: : roaa.mohammed@uomosul.edu.iq

8. Course Objectives

Objectives of the study subject
Theoretical
Introducing students to the concept of transferring agricultural technologies
Introducing students to the importance of transferring agricultural technologies
Introducing students to the stages of adopting agricultural technologies
Enabling students to understand and know decision-making regarding agricultural innovations
Introducing students to international experiences in transferring agricultural technologies

9. Teaching and Learning Strategies

Strategy

The strategy
Theoretical
lecture
Group discussion
Assigning the student to prepare a report

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoreti	My theory: The student gets to	Theoretical: Introduction to	My theory: lecture	Short exa Duties

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		know the concept Transfer of agricultural technologies a1c1b1	technology transfer, the concept of technology and agricultural technology transfer	the blackboard Audio aids	
2	2 Theoreti	theoretical: For the student to get to know Elements of agricultural technology transfer a2	Theoretical: Elements of agricultural technology transfer	My theory: lecture the blackboard Audio aids	Short exa Duties
3	2 Theoreti	My theory: The student explains stages of transfer Agricultural techniques A2	My theory: Stages of transfer of agricultural technologies	My theory: lecture the blackboard	Short exa Duties
4	2 Theoreti	My theory: The student should classify how spoke Diffusion process For the student to get to know Elements technology dissemination a4	My theory: Dissemination of agricultural technologies and their components	My theory: lecture the blackboard Audio aids My work: assignme With	Short exa Duties
5	2 Theoreti	My theory: The student should able toDetermine stages of adoption The student draws a diagram of stages Adoption b3	My theory: Stages of the adopt process	My theory: lecture the blackboard Audio aids My work: assignme With illustrations And practical repor	Short exa Duties
6	2 Theoreti	My theory: To give the student example of Stages of technology transfer process In disseminating forestry techniques A5	My theory: Stages of technology transfer / applied examples in forests	My theory: lecture the blackboard Audio aids	Short exa Duties
7	2 Theoreti	My theory: The student must be able On display the stages of taking Decision on	My theory: Stages of the innovation decision-making process	My theory: lecture the blackboard Audio aids My work: assignme	Short exa Duties

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		innovations The student draws a diagram of stages of decision-making regarding innovationsa6 b3		With	
8	2 Theoreti	My theory: The student explains transfer curricula Technologiesa7	Theoretical: Technological transfer approaches	My theory: lecture the blackboard Audio aids	Short exa Duties
9	2Theoretic	My theory: The student draws a diagram Rogers model decision making Adopting or rejecting innovationsb6 a8	Theoretical: Rogers' model for making the decision to adopt and reject innovations	My theory: lecture the blackboard Audio aids My work: assignme With illustrations Assigning tasks a reports	Short exa Duties
10	2 Theoreti	My theory: The student should distinguish between types of forest technologiesa6	Theoretical: Types of technologies in forests	My theory: lecture the blackboard Audio aids	Short exa Duties
11	2 Theoreti	My theory: To give the student example of Types of agricultural technologies a10 b8	Theoretical: Types of agricultural techniques	My theory: lecture the blackboard Audio aids My work: assignme Preparing posters Tasks and reports	Short exa Duties
12	2 Theoreti	My theory: The student should able to The use of technologies development Forestsa11 c4	Theoretical: Using agricultural technologies in forest development	My theory: lecture the blackboard Audio aids	Short exa Duties
13	2 Theoreti	My theory: The student gets to know the concept And components of agricultural innovation system a12	Theoretical: The concept and components of the agricultural innovation system	My theory: lecture the blackboard Audio aids	Short exa Duties

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14	2 Theoreti	My theory: The student should able to Apply publishing guidelines Technologies among farmers a13 b9	Theoretical: Guidelines for disseminating agricultural technologies in farmers' fields	My theory: lecture the blackboard Audio aids	Short exa Duties
15	2 Theoreti	My theory: The student should able to Acquire skills transportation Agricultural techniques d1	Theoretical: Organizing a scientific visit to the extension and training center and farmers' fields	My theory: lecture Audio aids My work: report on the visit	Short exa Duties

11. Course Evaluation

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

	Calendar methods	Calendar date (one week)	Class	Relative weight
1	daily exam)1) Quiz theoretical	1 - 14	10	20%
2	Examdaily (2)Quiz theoretical	1 - 14	10	6%
3	First semester theoretical exam	6	30	30%
4	My theory reports	10 – 11	10	20%
5	Practical homework	4 - 5 - 7 - 8 - 9	10	20%
6	Second semester theoretical exam	14	30	30%
	Total		100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Agricultural extension book - lectures agricultural extension principles
Main references (sources)	*Rogers ،Everett (16 أغسطس ٢٠٠٣).* *Diffusion of Innovations, 5th Edition.* *Simon and Schuster.* *ISBN:978-0-7432-5823-4.*
Recommended books and references	Published research on the transfer of agricultural technologies

Course Description Form

(scientific journals, reports…)	
Electronic References, Websites	FAO is the Food and Agriculture Organization the United Nations

مدرس المادة النظري

م.رؤى محمد حامد

رئيس اللجنة العلمية

أ.م . د

رئيس قسم الغابات

أ.د.محمد سعيد البطل

Course Description Form Biochemistry

1. Course Name:

Biochemistry

2. Course Code:

BICH204

3. Semester / Year:

First semester (fall) / 2023-2024 \ 2st

4. Description Preparation Date:

٢٠٢٣\٩\١

5. Available Attendance Forms:

Presence

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

2 theoretical hours + 3 practical hours (75 hours) / 3.5 units

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

Dr.Qaswaa yousif jameel dr.qaswaa_yousif@uomosul.edu.iq
Afkar yahya ahmed

8. Course Objectives

Theoretical	Practical
-Enabling the student to understand and comprehend the science of biochemistry **-Enable the student to know the chemical composition of carbohydrates, proteins, and lipids** **- Enabling the student to be familiar with the most important sources of carbohydrates, proteins and fats** **-Empowering the student with the ability to detect different types of vital components in the organism's body** **District**	**Enabling the student to become familiar with the principles and modern methods in…** **Study of biochemical sciences as well as study Synthesis of proteins, carbohydrates, and fats and the tests performed on them**

9. Teaching and Learning Strategies

Theoretical:	Practical:
- Interactive lecture - Brainstorming - Dialogue and discussion - Assigning reports -Conducting monthly and	Interactive lecture -Discussion, dialogue, brainstorming -Conducting laboratory experiments -Assigning reports -Conducting daily and

daily examinations	monthly examinations

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3Practical	Theoretical: B1: Explains to the stude the concept of chemistry Biotechnology and the st of water properties Practical: B2:Shows the student ho to apply Laboratory safety rules	THEORETICAL the study of water and its properties Practical: safety rules an specifications in Laboratories	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
2	2Theoretical 3Practical	THEORETICAL C1: Explains to the stude the most important differences in the chemic composition of carbohydrates practical: a2: Explains to the stude how to detect Carbohydrates and their types	THEORETICAL Theoretical: auditory methods, Writing on the board Dialogue style Direct Practical: Assigning tasks Short exam reports and assignments for discussi	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical 3Practical	THEORETICAL :b2 The student is familia with the factors affecting amino acids and peptides practical: : b3 The student is famili with the most important tests General carbohydrates	THEORETICAL CARBOHYDRATES Practical: Carbohydrates and their types	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
4	2Theoretical 3Practical	THEORETICAL A1: The student learns about the mechanism of action of proteins, their properties, and their structure practical: b4: The student learns about the reduction tests carbohydrates	THEORETICAL auditory methods, Writing on the board Dialogue style Direct Practical: Assigning tasks And reports Short exams, assignment discussions	THEORETICAL audio methods, Writing on the board Direct dialogue Style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
5	2Theoretical 3Practical	THEORETICAL C2: Explains to the stude the changes that occur in lipids, their composition and properties. practical: b5: Explains the tests to t	Theoretical Amino acids and peptide Practical: solubility test a Molsch test.	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions

		student Description of carbohydrates			
6	2Theoretical 3Practical	THEORETICAL C3: Proposes to the stude a method suitable for the natural and chemical properties of neutral fats practical: a3: Tests related to fats a suggested to the student	Theoretical: audio metho Writing on the board Dialogue style Direct Practical: Assigning tasks Short exam reports, assignments, and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
7	2Theoretical 3Practical	THEORETICAL C4: The student is familia with the most important changes that occur in phosphorylated fats (phospholipids). practical: a4: The student is familia with screening tests Clycerol	THEORETICAL Proteins practical Reductive tests for carbohydrates	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
8	2Theoretical 3Practical	THEORETICAL A2 :The student recogniz the most important chan Which occurs in enzymes and restriction Its agents practical: a5: The student learns ho to examine The pH of many solutions the organization	THEORETICAL auditory methods, Writing on the board Dialogue style Direct Practical: Assigning tasks Short exam reports, assignments, and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
9	2Theoretical 3Practical	THEORETICAL B3 :The student judges h competence Nucleotides and nucleic acids In the metabolic process of living organisms Practical: A6: The student is given general and descriptive tests for amino acids	THEORETICAL Lipids Practical: Descriptive tes For carbohydrates	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
10	2Theoretical 3Practical	THEORETICAL A3: The student learns about the most importan chemical structures of nucleic acids (polynucleotides). practical: b6: Explains to the stude methods for detecting amino acids containing sulfur	Theoretical: auditory methods, Writing on the board Dialogue style Direct Practical: Assigning tasks Short exam reports, assignments, and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
11	2Theoretical 3Practical	THEORETICAL B4 : The student masters method and types of nucl acids practical:	THEORETICAL Physical and chemical properties of neutral fats Practical: special tests fo	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL	Shortexams, assignments, discussions

		a1: The student takes the Millon test and the xanthoproteic test	lipids	Assigning tasks and reports	
12	2Theoretical 3Practical	THEORETICAL E1: The student determi the mode of action and t importance of vitamins i the body of a living organism practical: c7: The student mention descriptive tests for proteins	THEORETICAL . audio methods, Writing on the board Dialogue style Direct Practical: Assigning tasks And reports Short exams, assigned assignments and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
13	2Theoretical 3Practical	THEORETICAL A4: The student learns abo the types of fat-soluble vitamins and common dise resulting from their deficie in the organism's body. practical: a 8: The student learns abo a test Biuret	THEORETICAL Common diseases resulti from vitamin deficiency Practical: protein precipitation With heavy metal salts,	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
14	2Theoretical 3Practical	THEORETICAL B3 :The student learns about the types of fat-soluble vitamins and common diseases resulti from their deficiency in t organism's body. practical: a6: Characterizes the precipitation of proteins with salts Heavy metals	THEORETICAL Theoretical: auditory methods, Writing on the board Direct dialogue style Practical: Assigning tasks Short exam reports, assignments and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
15	2Theoretical 3Practical	THEORETICAL C5: The student is familiar with how to write reports Result of field visit to laboratories Biochemistry practical: C8: The student is familiar with how to write reports Result of field visit to laboratories Biochemistry	THEORETICAL biochemistry laboratorie audio methods, Writing on the board Direct dialogue style Practical: Assigning tasks And reports Short exams, assigned assignments and discussions	THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions

11.Course Evaluation

No.	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Report 1	fourth week	2.5	2.5
2	Report ٢	fifth week	2.5	2.5
3	(١)Quiz	sixth week	2	2
4	(٢)Quiz	fourteenth week	2	2

5	(٣)Quiz	fifteenth week	1	1
6	Mid 1	sixth week	7.5	7.5
7	Mid2	Eleventh week	7.5	7.5
8	theoretical exams Final	Final semester exams	40	40
9	Practical field project	The fifteenth week	5	5
10	Seminars	The third and fifth week	2	2
11	Practical (١) Quiz	The first week	1	1
12	Practical (٢) Quiz	fourth week	0.5	0.5
13	Practical (٣) Quiz	The fourteenth week	6.5	6.5
15	Final practical test	Final semester exams	20	20
	Total	100	%100	%100

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Many articles and research published in Springer, Elsevier, SPRINGER NATURE
Electronic References, Websites	

Assistant Professor

Qaswaa yousif jameel

Assistant Lecturer

Afkar yahya ahmed

Chairman of the Scientific Committee : Dr. mohammed younes Al – alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Younes Said

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
Breeding and improving forest trees
2. Course Code:
FOPL301
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
25 / 4 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. omar mudhafer omar Email: dr.omar77mudhafer@uomosul.edu.iq

8. Course Objectives

Theory : Preparing and qualifying specialized engineers in the field of forestry to meet the requirements of labor market in the private and public sectors, through the use of many learning and teaching methods and training students to apply the acquired knowledge and skills to solve the obstacles that limit the spread of forests. Providing distinguished academic programs in the field of forest sciences from a theoretical and practical perspective, so that they comply with international standards of academic quality and meet the needs of the labor market	Practical : The practical aim of the Education and Improvem of Forest Trees course is for students to beco familiar with and see the types of forest trees, methods of breeding that can be carried out, and types of pollination of forest trees

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	My theory: A1: Learn about the principles and foundations of educati and improvement practical :	General principles for breeding and improvir forest trees	Lectures and discussion	Discussion

		A6: Learn about the ty of trees and their importance			
2	2Theory 3 Pract	My theory: A2: He is aware of the importance of seed sources practical : A7: Learn about seed dispersal methods and seedling planting methods	Provinces, sources of seeds and imported species	Lectures and discussion	Discussion
3	2Theory 3 Pract	My theory: E1: Identify the importance of hybridization and wha the strength of the hyb practical: A8: Learn about the ty of forest tree seeds an methods of treating th	Hybrid, hybrid vigor, natural hybrid - artifici hybridization	Lectures and discussion	Discussion
4	2Theory 3 Pract	A3: Identify the necessary procedures improve trees practical : B2: Students documen the types of forest tree and calculate the distances between tre	Quantitative factors fo improving forest trees	Lectures and discussion	Discussion
5	2Theory 3 Pract	My theory: A4: Learn about electi methods practical : d1: Application in the nursery to the selectio process My theory: C1: Identifying the requirements of education programs practical : A9: Identify the types forest trees suitable fo planting in Iraq	Selection and breedin of species resistant to diseases, insects and environmental factors	Lectures and discussion	Discussion
6	2Theory 3 Pract	My theory: A5: Learn about vegetative propagatio its types, importance, application conditions	Objectives, requireme and obstacles of education and improvement programmes	Lectures and discussion	Discussion

		practical : C6: Practical applicatic on vegetative reproduction			
7	2Theory 3 Pract	My theory: B1: Identify methods o reproduction practical : A10: Identify the abundant forest trees	Sexual and asexual methods of propagatic collecting seeds - stor and extracting seeds	Lectures and discussion	Discussion
8	2Theory 3 Pract	My theory: C2: Explains the reaso for variation and difference practical : A11: How can genetic variation be distinguished?	Vegetative propagatio	Lectures and discussion	First semester exam for one h
9	2Theory 3 Pract	My theory: e2: The importance of genetic mutation practical : A12: How can a geneti mutation be caused?	Variation in forest tree and its uses	Lectures and discussion	Discussion
10	2Theory 3 Pract	My theory: C3: The importance of chromosome replicatic practical : C7: How can chromosome duplicati occur?	Genetic mutations	Lectures and discussion	Discussion
11	2Theory 3 Pract	My theory: C4: Explains the types DNA practical : a13: recognizes the DN chain	Chromosomal duplication	Lectures and discussion	Discussion
12	2Theory 3 Pract	My theory: e3: How can forests be improved? practical : c8: practical applicatio	DNA and RNA	Lectures and discussion	Discussion
13	2Theory 3 Pract	My theory: E4: Determines the criteria and basis for election practical :	Improving natural fore	Lectures and discussion	Discussion

		C9: Practical applicatic of the election method			
14	2Theory 3 Pract	A1: Learn about the principles and foundations of educati and improvement practical : A6: Learn about the ty of trees and their importance	Election	Lectures and discussion	A second semester exam for one hour
15	2Theory 3 Pract	My theory: C5: Explains the most important types of pollination in trees and shrubs practical : C10: Practical applicat on vaccination	Self and cross pollinat	Lectures and discussion	Discussion

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Genetics and Improvement of Forest Trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Omar mudhafer Omar

Teacher of Practical : Mr. Mohammed Samer Edres

Chairman of the Scientific Committee : Dr. mohammed younes Al – alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:	
Computer applications4	
2. Course Code:	
COMA401	
3. Semester / Year:	
Autumn semester / 2023−2024	
4. Description Preparation Date:	
25/3/2024	
5. Available Attendance Forms:	
Blended learning (Attendance + Electronic)	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 practical hours/1.5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Najla Matti Isaac Email: najla.matti@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	• **Enable the student to become familiar with the SAS statistical program and its applications in agricultural experiments.** • **Enable the student to know and understand programs in the SAS language and apply the steps and procedures followed to use the SAS statistical program in analyzes of agricultural experiments.** • **Enabling the student to write programs in the SAS language for various agricultural and scientific experiments.** • **Providing the student with the skills of dealing with data types when writing programs in the SAS language.** • **Enabling the student to correct grammatical and linguistic errors that appear when implementing programs**

	written in the SAS language • **Enable the student to read, understand and interpret the results and outputs of implementing programs written in SAS.**

9. Teaching and Learning Strategies

Strategy	1. Applying modern strategies for education. 2. Providing learners with many different skills and knowledge. 3. Increase students' ability to learn. 4. Diversity in methods and implementation of the curriculum in the teaching process, taking into account individual circumstances, abilities and potentials of learners. 5. Learning and teaching are carried out according to the latest self-education tools using computers and through modern programs in the fields of education. 6. Use effective modern teaching strategies that help all types of students participate in educational materials.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 practical	The student should be able to know and understand the nature and objectives of the SAS program and the tools	What is the SAS program - storing and retrieving information - modifying and programming data - writing reports - statistical analysis - processing records	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS	Exams, reports, discussions, quizzes

		necessary to analyze the data available in the program.		program	
2	3 practical	The student should be able to know and understand SAS windows and practical application therein	SAS windows - writing and loading the program window - program execution steps window - results window. Who uses SAS software? Why SAS	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes
3	3 practical	The student should be able to know, understand and practically apply the general steps for writing a SAS program.	General steps for writing a SAS program.	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS	Exams, reports, discussions, quizzes

				program	
4	3 practical	The student should be able to know, understand, and practically apply the use of functions, their importance, and formulas for using them in writing a program in the SAS language.	Functions	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes Exams, reports, discussions, quizzes
5	3 practical	The student should be able to know, understand and practically apply to create new data from the input data set using mathematical operations or functions and the	Create new data from an input data set using mathematical operations or functions.	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes

		formulas for using them in writing a program in the SAS language.			
6	3 practical	The student should be able to know, understand and practically apply to generate statements using IF conditionals. The use of conditional statements to delete data from the data set and the formulas for using them in writing a program in the SAS language	- Generate data using IF conditional statements. - Using conditional statements to delete data from the data set in the program + scientific visit.	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes
7	3 practical		Semester exam 1	Lectures, audio materials, reports, and images	Exams, reports, discussions, quizzes

				with practical application of exercises and experiments using the SAS program	
8	3 practical	The student should be able to know, understand, and practically apply sorting and arranging data and the formulas used in writing a program in the SAS language.	- Sorting and arranging data Use the PROC SORT statement	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes
9	3 practical	The student should be able to know, understand and practically apply to find one-way and two-way	- Applications in descriptive statistics - One-way frequency distribution table - Two-way frequency distribution table PROC FREQ	Lectures, audio materials, reports, and images with practical application of exercises and experimen	Exams, reports, discussions, quizzes

		frequency distributio n tables and the formulas for using them in writing a program in the SAS language.		ts using the SAS program	
10	3 practic al	The student should be able to know, understan d, and practically apply measures of averagene ss and dispersion and formulas for using them in writing a program in the SAS language.	-Measures of mediation and measures of dispersion. PROC MEANS	Lectures, audio materials, reports, and images with practical application of exercises and experimen ts using the SAS program	Exams, reports, discussion s, quizzes
11	3 practic al	The student should be able to know, understan d and practically	- Test of means and analysis of variance - t-test	Lectures, audio materials, reports, and images with practical application	

		apply T-test formulas to use in writing a program in the SAS language		of exercises and experiments using the SAS program	
12	3 practical	The student should be able to know, understand and practically apply the analysis of variance table and formulas to use in writing a program in the SAS language	- Analysis of variance formula PROC ANOVA- - PROC GLM	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes
13	3 practical		Semester exam ۲	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS	Exams, reports, discussions, quizzes

				program	
14	3 practical	The student should be able to know, understand and practically apply to find the correlation coefficient and the formulas used in writing a program in the SAS language	PROC CORR correlation coefficient formula	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes
15	3 practical	The student should be able to know, understand and practically apply to find the regression equation and the formulas for using it in writing a program in the SAS language	PROC REG REGRESSION FORMULA	Lectures, audio materials, reports, and images with practical application of exercises and experiments using the SAS program	Exams, reports, discussions, quizzes

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books any)	A curriculum was prepared by computer professors at the college based on the SAS software guide.
Main references (sources)	- SAS software guide - A Handbook of Statistical Analyses using SAS. (authors: Geoff Der and Brian S. Everitt) Data analysis using the SAS statistical program, written by Dr. Firas Rashad Al-Samarrai
Recommended books and references (scientific journals, reports...)	Statistical analysis using the SAS package, prepared by: Abdullah Al-Shahrani
Electronic References, Websites	https://www.sas.com/en_sg/training/offers/free-training.html https://video.sas.com/detail/videos/how-to-tutorials https://www.udemy.com/course/sas-programming-for-beginners https://sascrunch.com/courses/sas-base-programming-for-absolute-beginners-free-version/

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

مدرسة المادة

نجلاء متي اسحق

رئيس القسم

أ.د. مزاحم سعيد البك


اللجنة العلمية

Course Description Form

1. Course Name:
Computer applications2
2. Course Code:
COMA203
3. Semester / Year:
Second semester/Second stage/2023-2024
4. Description Preparation Date:
٢٠٢٤/٢/١
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total):
45 working hours/1.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Ahmed Nazar Hassan Email: ahmadccniit@uomosul.edu.iq
8. Course Objectives

Course Objectives	• **Teaching the student the fundamentals of utilizing a computer and its apps (Word, Excel), as well as expanding his understanding of these tools to apply the methods and steps needed to use them in analyses of agricultural experiments.** • **Enhancing his service program management, helping him to finish tasks and reports, and fixing any grammatical or language faults that crop up.** • **The learner gains the ability to handle various data kinds, print, prepare statistics, and identify pre-made functions, graphs, chart designs, etc. at the same time. The student can thus read, comprehend, and evaluate program outputs and outcomes, including Excel. On the other hand, the availability of Internet connection has made it imperative that students acquire computer skills and knowledge of essential service applications.**

9. Teaching and Learning Strategies	
Strategy	- Interactive lecture

	- Brainstorming - Dialogue and discussion - Field Training - Practical exercises - Field project - Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 practical	A1: Introducing the student to the Word program and the importance of using it in writing reports and reports in terms of explaining the basic elements that make up its windows as well as understanding its function, including the launch bar, learning how to create a new document and adding text inside, how to store and retrieve information, and learning how to form letters in the Arabic language, And select or select text. The new and deleted version and other definitions such as the font type and how to change its appearance	What is WORD program? The basic elements that make up the rose window	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.

2	3 practical	B1: The ability to know, understand and apply equations in a practical way, as well as how to use counters and digital counts, knowledge of documentaries, levels, the importance of spacing principles, as well as paragraph and line spacing, search and replace, and the steps to insert a page and a blank page.	Explanation of the command bar for menus	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
3	3 practical	C1: Ability to know, understand and apply practical application to explain how to insert a table into a document How to convert text into a starting table that can be run on.	Tables and shortcuts in Word	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
4	3 practical	D1: Ability to know, understand and practically apply how to include predictive results to display results and an attractive link, as well as how to insert technical texts and create signatures in the document.	Charts, links and technical texts	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
5	3 practical	D2: Capable of knowledge, understanding and practical application to explain the method of inserting caps and Date, how to prepare the index, and print with file types	Insert, date and print operations	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.

6	3 practical	D3: The ability to know, understand and practically apply the image to be inserted from the Internet and recognize its symbols	Processes of inserting an image from the Internet and its patterns	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
7	3 practical	D4: Able to know, understand and practically apply skeleton inserts, artistic stills and video films	Insert diagrams, snapshots and movies	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
8	3 practical	D5: Able to know, understand and practically apply c insert with evidence and examples as well as write and learn how to convert text into columns and what the margins are for their settings and occasions.	Header, footer, margins and page settings	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
9	3 practical	A1: Able to know, understand and practically apply to explain the basic elements that make up an Excel window, what is dynamic, selection shortcuts, how to edit rows and columns, and the usefulness of the Auto box.	An introductory introduction to Excel	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
10	3 practical	B1: Able to know, understand and apply base rates practically How to add core	Mathematical equations and basic states	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
11	3 practical	C1: Able to know, understand and practically apply the use of functions in Excel	Types of basic functions	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
12	3 practical	D1: Able to know, understand and apply the use of Excel's grammar count function in practice	Conditional counting function	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
13	3 practical	D2: The ability to know, understand and apply special or distinct data in a practical way and replace it with	Search, replace and manage worksheets	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-	Quiz, practical test, Homework, semester test, Final test.

		worksheets in Excel.		learning.	
14	3 practical	D3: Ability to know, understand and apply four fast and reliable ways to deal with a set of data by learning the sorting and filtering methods in Excel.	Sorting and filtering data	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
15	3 practical	D4: Able to know, understand and practically apply printable chart insertion and page layout in Excel	Chart and printing	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.

11. Course Evaluation

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
	The total		100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic computer and software skills Prof. Dr. Muhammad Bilal Al-Zoghbi Prof. Dr. Ahmed Al-Sharay'a (University of Jordan)
Main references (sources)	1. Introduction to Computer and Information Systems / L.Long / Forth Edition-Prentice-Hall ، 1944. 2.Projects for DOS 6 & Windows 3.1 / Fox ، Metzeelaer and Scharpf / Benjamin / Cummings Pub. 1995. 3. Different websites
Recommended books and references (scientific journals, reports…)	lectures from the university library available to other British universities
Electronic References, Websites	Numerous scientific websites on the web

Theoretical and Practical subject teacher:

Dr. Ahmed Nazar Hassan

Chairman of the Scientific Committee:

Dr. Muhammad Younis Al-Allaf

Head of the Department:

Dr. Muzahim Saeed Al-Bek

Course Description Form Computer applications3

1. Course Name:	
Computer applications3	
2. Course Code:	
COMA301	
3. Semester / Year:	
Second semester/third stage/2023−2024	
4. Description Preparation Date:	
1/2/2024	
5. Available Attendance Forms:	
In presence	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 practical hours/1.5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Najla Matti Isaac Email: najla.matti@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	• **Enabling the student to become familiar with the statistical program SPSS and its applications in agricultural experiments.** • **Enabling the student to know and understand programs in the SPSS language and apply the steps and procedures followed to use the SPSS statistical program in analyzes of agricultural experiments.** • **Enabling the student to write programs in the SPSS language for various agricultural and scientific experiments.** • **Providing the student with the skills of dealing with data types when writing programs in SPSS.** • **Enabling the student to correct grammatical and linguistic errors that appear when implementing programs written in SPSS.** • **Enabling the student to read, understand and interpret the results and outputs of implementing programs written in SPSS..**
9. Teaching and Learning Strategies	

Strategy	- Interactive lecture - Brainstorming - Dialogue and discussion - Field Training - Practical exercises - Field project - Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 practical	A1: The student should be able to know and understand the nature and objectives of statistics	What is Statistics Science? Descriptive statistics: Statistics Inferential: Community Population: Census: Statistical metrics First: Measures of Central Tendency Second: Measures of absolute dispersion	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
2	3 practical	B1: Able to understand SPSS windows, the purpose of each window, and how to deal with them.	Run and familiarize yourself with the SPSS program Program windows Getting to know the program windows.	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
3	3 practical	C1: Able to understand the types of files that SPSS deals with and know the basic steps and rules in analyzing data and executing basic commands in SPSS.	Retrieve data and files: save the file: Add, modify and control variables Add a variable or view: Cancel a variable, view, or state Search for a case search for value.	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
4	3 practical	D1: Able to know, understand, and practically apply sorting and arranging observations and finding their sequential ranks in the SPSS program.	Sort observations command sort cases Ranking of observations according to a specific variable: Using the IF function with Compute	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
5	3 practical	D2: The student should be able to know, understand and practically apply the Compute command and use it to create a new variable using an	Compute. command Create a new variable using an arithmetic expression or an equation Create a new variable using a function	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.

		arithmetic expression, equation or function and use the IF function with Compute			
6	3 practical	D3: The student should be able to know, understand, and practically apply to find a frequency distribution table and draw a histogram.	Descriptive statistics and histograms of data (1) Histogram and Frequencies + Scientific visit	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
7	3 practical	D4: The student should be able to know, understand, and apply practical measures to find descriptive statistics.	(2) Descriptive Statistics + Semester exam 1	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
8	3 practical	D5: The student should be able to know, understand, and practically apply the use of the graph and its types	Chart Learn about several types of chart Graph	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
9	3 practical	A2: The student should be able to know and understand hypothesis testing, the terminology used in it, and the steps for hypothesis testing.	Test of hypotheses 1- Statistical hypothesis 2- The level of significance or the level of probability 3- Statistical test function 4- Probability value (Sig. or P-value): -Steps for testing hypotheses	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
10	3 practical	D6: The student should be able to know, understand, and practically apply the T-test when testing hypotheses related to a single mean.	First: T-test in the case of testing hypotheses related to one mean.	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
11	3 practical	D7: The student should be able to know, understand, and practically apply to test the differences between two independent combined averages	Second: Tests of differences between two independent combined averages.	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
12	3 practical	D8: The student should be able to know, understand, and practically apply to test the differences between the means of two populations from related samples	Third: Tests of differences between the averages of two groups of related samples. + Semester exam 2	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
13	3 practical	D9: The student should be able to know, understand, and practically apply one-way analysis of	Analysis of Variance (ANOVA) One-Way ANOVA	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-	Quiz, practical test, Homework, semester test, Final test.

		variance		learning.	
14	3 practical	D10: The student should be able to know, understand, and practically apply to find the simple linear correlation and the correlation coefficient	Simple Linear Correlation Correlation Coefficient.	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.
15	3 practical	D11: The student should be able to know, understand, and practically apply how to find simple linear regression	Simple Linear Regression	Interactive lecture, brainstorming, dialogue and discussion, practical exercises, and self-learning.	Quiz, practical test, Homework, semester test, Final test.

11. Course Evaluation

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
	The total		100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	A curriculum was prepared by computer professors at the college based on the SPSS software guide.
Main references (sources)	- A Handbook of Statistical Analyses using SPSS by Sabine Landau and Brian S. Everitt 2004 - IBM SPSS Statistics 22 Core System User's Guide by IBM – 2013. - Data analysis using the statistical program SPSS, written by Dr. Firas Rashad Al-Samarrai.
Recommended books and references (scientific journals, reports…)	- Your guide to the statistical program SPSS Prepared by Saad Zaghloul Bashir.
Electronic References, Websites	https://www.SPSS.com/en_sg/training/offers/free-training.html https://video.SPSS.com/detail/videos/how-to-tutorials https://www.udemy.com/course/SPSS-

	programming-for-beginners https://SPSScrunch.com/courses/SPSS-base-programming-for-absolute-beginners-free-version/

Theoretical subject teacher: Practical subject teacher: Najla Matti Isaac

Chairman of the Scientific Committee: Head of the Department:

Course Description Form Dendrology

1. Course Name:
Dendrology
2. Course Code:
DEND254
3. Semester / Year:
1st Semester / 2023-2024
4. Description Preparation Date:
1 / 9 / 2023
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Haees Sayel Jarjes Email: haees_sayel@uomosul.edu.iq Name: Dr. Shahla abdalrazagh Basher

8. Course Objectives

Theory : -Enabling the student to understand and comprehend the foundations of plant division and an overview of the history of plant division and the stages of its development -The student's familiarity with the vegetative and reproductive parts of the tr -Preparing cadres capable of identifying a knowing methods for diagnosing and classifying forest trees. -Enable the student to name types of fores trees according to the international rules c botanical nomenclature -Enabling the student to know and identif the minor and major taxonomic ranks -Students' familiarity with the types of forest trees, including local and introduced seedless and seedless ones. -Choosing the suitability of forest tree species to various environmental conditio - Enabling the student to use chemical classification in solving problems resulting from phenotypic similarity and diagnosing and distinguishing tree species by their content of chemical compounds.	Practical : •Enabling the student to practically collect and preserve plan models •Preparing qualified cadres to use various methods of diagnosing forest trees •Determine the appropriate type of planting by knowing and identifying the types of deciduous or evergreen trees. •Practical identification of the various parts of the vegetative and reproductive tree • The student should be able to use one of the diagnostic methods practically, directly in the forest

9. Teaching and Learning Strategies	
Strategy	-Interactive lecture -Brainstorming -Dialogue and discussion - Assigning tasks and reporting

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Practical.	Theory: A1 Learn about the principles and foundations of plant division Practical: A9 Introducing the sources of plant identification- B2How to collect, dry and load plant specimens into the herbarium - Uses too to collect d	Theory: Principles and foundations of pla division and som division terms Practical: Collect, dry and preserve models	Theory : In-person lectures Practical : In-person lectures with clarification of the sections with pictures and using wood samples in th laboratory	Discussions and interaction in the lectu and a short test
2	2Theory 3 Practical	Theory: A2 is familiar with th objectives of segmentation science and some segmentati terminology A4 recognizes the stages and eras that t science of division passed through practical : A10 Recognizes leave Definition of leaf - Le structure - Understar the arrangement of leaves on the stem- B3 Uses and sees models and paintings simple and compoun leaves and the arrangement of leave on the stem	Theory: Objectives of plan division and its relationship to ot sciences practical : Vegetative characteristics of trees	Theory : In-person lectures Practical : In-person lectures with field visits	Quotes and interacti in the lecture Short test
3	2Theory 3 Practical	Theory: A6 Understands the history of botanical	Theory: A historical overview of the	Theory : In-person lectures with field visits	Short test Direct drawing

		taxonomy practical: A12 Identify leaves - types of leaves according to the shap of the blade B4- Explains the typ of leaves in relation t the edge of the blade. C3- Experiments with models and drawings on the shapes of the l blade and the shapes the blade edge.	science of plant division practical : Vegetative characteristics of trees	Practical : In-person lectures with field visits	
4	2Theory 3 Practical	Theory: E3 Identify the foundations of plant evolution and the bas trends of evolution practical : C4 sees leaf venation the characteristics of the leaf surface B5 Apply and watch models and paintings about leaf veining, its types, and the characteristics of the paper surface	Theory: Foundations of pl evolution and bas trends of evolutio practical : Reproductive characteristics of trees	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Field evaluation Direct drawing
5	2Theory 3 Practical	Theory: A3 identifies the majo and minor taxonomic ranks practical : A13- Identify the flov - the structure of the flower. C6- Draw and show the symmetry i the flower - the arrangement of the flowers.	Theory: Major and minor taxonomic ranks practical : Reproductive characteristics of trees	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
6	2Theory 3 Practical	Theory: B1 Uses correct scientific names practical : A14: Gets acquainted with unlimited inflorescences - limit inflorescences - familiarizes with	Theory: Theoretical: Principles of botanical nomenclature practical : Reproductive characteristics of trees	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing

		methods for studying floral squares			
7	2Theory 3 Practical	Theory: A5 Choose one of the modern classificatior system Practical: A15: Identify fruits - types of fruits - characteristics that h in classification - branches - bark	Theory: Common classification systems in the wo practical : Reproductive characteristics of trees	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
8	2Theory 3 Practical	Theory: C1 explains the most important diagnostic methods used practical : A16Learning about plant diagnosis meth - Familiarity with the use of plant keys - Viewing types of fore trees on field tours	Theory: Plant Identificatic practical : Use the keys to identify some tre species	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
9	2Theory 3 Practical	Theory: C2 Proposes classification traits a clues family practical : A17 Identify some se families - Cycads - Ginkgoaceae - Taxus Taxodium - Pine	Theory: Characteristics, classification indi and their types practical : Some gymnosper families	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
10	2Theory 3 Practical	Theory: runs seminars on most important racters used in plant ssification practical : A18 is devoted to the Cypress family - field observation - to iden the types of trees belonging to the seed bed.	Theory: Characteristics adopted in plant classification practical : Some gymnosper families	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
11	2Theory 3 Practical	Theory: E1 Justifies the importance of using chemical classificatio and byproducts	Theory: Principles of chemical classification practical :	Theory : In-person lectures with field visits Practical : In-person lectures	Short test Direct drawing

		practical : A19 Gets acquainted with the group of cat-bearing inflorescence he is familiar with the willow family - the hickory family	Field observation	with field visits	
12	2Theory 3 Practical	Theory: E2 determines the appropriate classification for the plant queen practical : A20 learns about the beech family - the mulberry family - C7 conducts a field visit	Theory: Classification of plant kingdom practical : Some families are angiosperms	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
13	2Theory 3 Practical	Theory: Compares monocots l Dicotyledons practical: A21 Get to know the Almas family, the Tawouk family, the A Janar (plane) family	Theory: Gymnosperms practical: Some of families a angiosperms	Theory : In-person lectures with field visits Practical: In-person lectures with field visits	Short test Direct drawing
14	2Theory 3 Practical	Theory: A7 Identify the most important families of Dicotyledons practical: A22 Recognizes the Rosaceae family, the Butterfly family, and Acacia family	Theory: Angiosperms Practical:: Some of families a angiosperms	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Short test Direct drawing
15	2Theory 3 Practical	Theory: A23 recognizes some angiosperm families practical : D2 conducts field visi to learn about types o forest trees	Theory: Some of families a angiosperms Practical: Field observation	Theory : In-person lectures with field visits Practical : In-person lectures with field visits	Semester exam 2, fin exam

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory +	Week (9)	10 Theory +	% 15

	pract.)		5 pract.	
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any	The book Wood as a Raw Material, by George Tsumis, translated by Dr. Walid Aboudi Kassir and others - Universit Press Directorate - 1985
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Wood technology book - written by Dr. Latif Haji Dr. Samir Fouad
Electronic References, Websites	

مدرس المادة النظري : د. هايس صايل جرجيس Dr. Haees Sayel Jarjes

رئيس اللجنة العلمية : ا.د. محمد يونس العلاف

رئيس قسم علوم الغابات : م.د. مزاحم سعيد البك

Description Course of Design and analysis of Agriculture experiment

1. Course Name:
Design and analysis of Agriculture experiment
2. Course code :
DAAE302
3.Semester/Year:
First Semester /Third Stage/2023-2024
4.The date this description was prepared :
1/9/2023
5. 5-Available forms of attendance
In-Person
6.Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7.Name of the course administrator (if more than one name is mentioned) :
Dr. Omar Mudhafer Omar / theorotical Mr. Munther younus Mohammed / Practical
8 Course Objectives
• Learn about the foundations of agricultural design and implementation • Recognize agricultural experimental designs and the advantages and straightforwardness of each design • He is familiar with the choice of discrimination • Defines the problem of searching and selecting parameters • Field design planning • Conducts the field experiment • Analyzes research data • Extracts results
9 |||UNTRANSLATED_CONTENT_START|||التعليم استراتيجيات والتعلم|||UNTRANSLATED_CONTENT_END|||
- Interactive lecture - Practical exercises - Brainstorming - Assigning specific tasks and preparing reports on them - Dialogue and Discussion - Self-learning - |||UNTRANSLATED_CONTENT_START|||التدريب الميداني

|||UNTRANSLATED_CONTENT_END|||

10 10. Course Structure

Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical	A1: Key terms in the design and analysis of experiments	Trial , Transaction, Demo Unit, Demo Error	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A1:Introduction to experimental design and analysis	Key Terms , Statistical Codes	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2: Basics of experimental design and analysis	Repetition , Randomization , Controlling Demo Units	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A2: Full random design	Field trial diagram, variance analysis table	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
3	2 Theoretical	A3: Statistical Method	Identify research problem, select parameters , the choice of the adjective or adjectives studied , experiment design, experiment execution, Analyze data and results	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A3: Full random design	Exercises in full random design	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
4	2 Theoretical	A4: Group comparison	Testing the difference between the two medians , comparing the variance of two groups	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A4: Full random design in case of uneven redundancy	Variance analysis table, mathematical exercises in full random design in case of uneven repetition	Interactive lecture, brainstorming , dialogue and discussion , self-learning ,	- A midterm? Laboratory test

				laboratory training	
5	2 Theoretical	Variance Analysis:	Single-variance analysis, binary-variance analysis	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A5 : Design of complete random sectors	Field trial diagram, variance analysis table	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
6	2 Theoretical	A6: Full random design	Design advantages and disadvantages, full random design in case of equal redundancy	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A6:Design of complete random sectors	Sports exercises in the design of random sectors	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
7	2 Theoretical	A7: Full random design	Full random design in case of uneven redundancy	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A7: Latin square design	Field trial diagram, variance analysis table	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
8	2 Theoretical	A8 : Design of complete randomized sectors	Design Advantages and Disadvantages, Variance Analysis in the Design of Full Random Sectors	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B1 : Latin Square Design	Exercises in Latin Square Design	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
9	2 Theoretical	A9: Relative efficiency of full informal sector design	Relative efficiency, estimating missing data	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B2 : Field visit to the nursery	Carrying out field experiment diagrams for	Interactive lecture, brainstorming ,	- A midterm? Laboratory

			the complete randomized design , Sectors , Latin	dialogue and discussion , self-learning , laboratory training	test
10	2 Theoretical	A10 : Latin Square Design	Design Advantages and Disadvantages, Variance Analysis in Latin Square Design	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B3 : Multiple comparisons	Method of testing the lowest moral teams with the solution of sports exercises	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
11	2 Theoretical	A11 : Relative efficiency of Latin square design	Relative efficiency, missing values	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B4 : Multiple comparisons	Duncan Test Method with Exercise Solution	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
12	2 Theoretical	B1 : Multiple comparisons	Lowest Moral Difference Test, Duncan Test	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A8 : Factorial experiments with two factors in full randomized design	Workout Solution	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
13	2 Theoretical	A12 : Factorial experiments	Advantages and Disadvantages of Factorial Trials, a Two-Factor Experience in Complete Randomized Design	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A9: Factor experiments with two workers in the design of complete randomized sectors	Workout Solution	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
14	2 Theoretical	A13 : Factorial experiments	A two-factor experiment in the design of complete randomized sectors	Interactive lecture, brainstorming , dialogue and	- A midterm? A final test

				discussion , self-learning	
	3 Practical	A10 : Factorial Experiments with Two Factors in the Design of the Latin Square	Workout Solution	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
15	2 Theoretical	A14: Factorial experiments	A Two-Factor Experience in Latin Square Design	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B5: Field visit to the nursery	Conducting field plans for laboratory experiments	Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test

11 Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5
3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2
11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12 Learning and Teaching Resources

Required textbooks (methodology if any)	**Design and analysis of agricultural experiments – Dr. Khasha Mahmoud Al-Rawi - 1980**
Key References (Sources)	Design and analysis of experiments – Dr. Mohammed Mohammed Al-Taher Al-Imam - 1994
Recommended supporting books and references (scientific journals, reports…)	

E-References , Websites	

Theoretical subject teacher
Prof. Dr. Omar Muzaffar Omar

Practical Instructor
Eng. Munther Younis Mohammed

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis

Course Description Form

1. Course Name:
English Language 2
2. Course Code:
ENGL 201
3. Semester / Year:
Spring 2024
4. Description Preparation Date:
01/02/2024
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Hours ٢ Unit
7. Course administrator's name (mention all, if more than one name)
Name: L. Mohammed Nadher Mahmood Yamman2013@uomosul.edu.iq Name: A.L. Sarmed Hashim Taha sarmed.almaula@uomosul.edu.iq
8. Course Objectives

Course Objectives	• **To going on studying the English language in special the scientific language** • **Widening student mind about scientific and literature English vocabularies** • **Helping the students to think and write in English**
9. Teaching and Learning Strategies	
Strategy	Interactive lecture, brainstorming dialogue and discussion

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2hours Presence	(a1)The student should be able to know the basics of the English language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
2	2hours Presence	(a2)The student should be able to know the tenses of	Definition of the b ways of studying tenses English	Electronic lecture videos, posters ar other methods	Exams Reports Discussions

		the English language		related to learnin	quiz
3	2hours Presence	(a3)The student should be able to know the rules of the English language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
4	2hours Presence	(a4)The student sho be able to know the basics of the Englis language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
5	2hours Presence	(a5)The student sho be able to know the basics of the Englis language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
6	2hours Presence	(a6)The student sho be able to know th basics of the Englis language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams - Reports Discussions quiz
7	2hours Presence	(a7)The student sho be able to know basics of the Eng language	Definition of the best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
8	2hours Presence	(a8)The student shou be able to know the basics of the English language	Definition of the Best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
9	2hours Presence	(a9) The student sho be able to know basics of the Eng language	Definition of the Best ways to study English.	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
10	2hours Presence	(a10) The student should be able to kn the basics of the English language	Definition of the Best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
11	2hours Presence	(a11) The student should be able to know the basics of the English language	Definition of the Best ways to study English.	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
12	2hours Presence	(a12)The student should be able to kn the basics of the English language	Definition of the Best ways to study English.	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
13	2hours Presence	(a13)The student should be able to kn	Definition of the Best ways to study	Electronic lecture videos, posters ar	Exams Reports

		the basics of the English language	English	other methods related to learnin	Discussions quiz
14	2hours Presence	(a14)The student should be able to kn the basics of the English language	Definition of the Best ways to study English	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz
15	2hours Presence	(b1)The student should be able to know the basics of the English language	Definition of the Best ways to study English.	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussions quiz

11. Course Evaluation

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

No.	Evaluation Methods	Evaluation Date (Week)	Marks	Relative Weight (%)
1	Quiz (1)	Week 4	Theoretical (5)	5
2	Monthly Exam (1)	Week 6	Theoretical (15)	15
3	Quiz (2)	Week 8	Theoretical (5)	5
4	Monthly Exam (2)	Week 13	Theoretical (15)	15
5	Quest rate.	Seasonal rates are announced at the end of the semester.	Theoretical: (40)	40
6	Final Theoretical Test.	The Week Of Theoretical Exams.	60	60
Total			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Rapid Review of English Grammar 1957
Recommended books and references (scientific journals, reports…)	New Headway - English course English in agriculture1985 oxford bookworms
Electronic References, Websites	translate.yandex.com www.reverso.net /The Library Genesis junkybooks / cole13 / pdfdrive

A.L. Sarmed Hashim Taha

L. Mohammed Nadher Mahmood

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Head Of Department

Chairperson of the Scientific Committee

Course Description Form

1. Course Name:
English Language٣
2. Course Code:
ENGL300
3. Semester / Year:
2nd spring\2023-2024
4. Description Preparation Date:
1/2/202٤
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Hours 2 Unit The total number of hours is 30 hours
7. Course administrator's name (mention all, if more than one name)
Name: raghad ismail saeed alnuaimy Email: raghad.alnuaimy@uomosul.edu.iq
8. Course Objectives

Course Objectives	• **To going on studying the English language in special the scientific language** • **Widening student mind about scientific and literature English vocabularies** • **Helping the students to think and write in English**
9. Teaching and Learning Strategies	
Strategy	Making use of the electronic available methods alike auditory or the visual in addition to the white board

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2hours Presence	(a1) The student should be able to know the basics of the English language	Kinds of sentences.	Electronic lecture videos, posters ar other methods related to learnin	Exams Reports Discussion quiz
2	2hours Presence	(a2) The student should be able to know	English tenses/ introduction.	Electronic lecture videos, posters ar	Exams - Repo

		the tenses of the English language		other methods related to learnin	Discussion quiz
3	2hours Presence	(a3) The student should be able to know the rules of the English language	Simple tense/ with diagrams.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
4	2hours Presence	(a4)The student sho be able to know the basics of the English language	Progressive tense/with diagrams.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
5	2hours Presence	(a5)The student shou be able to know the basics of the English language	Perfect tense./ with diagrams.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
6	2hours Presence	(a6)The student shou be able to know the basics of the English language	Perfect progressive tense/with diagrams.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
7	2hours Presence	(a7) The student sho be able to know basics of the English language	verb to be	Electronic lecture videos, posters ar other methods related to learnin	Exams – Reports Discussion quiz
8	2hours Presence	(a8) The student should be able to know the basics of th English language	Parts of English nouns.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
9	2hours Presence	(a9)The student sho be able to know basics of the Eng language	Active and passive voice in English	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
10	2hours Presence	(a10)The student shou be able to know the basics of the English language	The scientific subjec preparator reading).	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
11	2hours Presence	(a11)The student should be able to know the basics of the English language	Re-reading for more comprehension.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
12	2hours Presence	(a12)The student shou be able to know the basics of the English language	Studying scientific terms.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
13	2hours	(a13)The student shou	Studying the	Electronic lecture	Exams -

	Presence	be able to know the basics of the English language	scientific terms.	videos, posters ar other methods related to learnin	Repo Discussion quiz
14	2hours Presence	(a14)The student shou be able to know the basics of the English language	Studying the scientific terms.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz
15	2hours Presence	(b1)The student should be able to know the basics of the English language	Translation into Arabic.	Electronic lecture videos, posters ar other methods related to learnin	Exams - Repo Discussion quiz

11. Course Evaluation

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

No.	Evaluation Methods	Evaluation Date (Week)	Marks	Relative Weight (%)
1	Quiz (1)	Week 4	Theoretical (5)	5
2	Monthly Exam (1)	Week 6	Theoretical (15)	15
3	Quiz (2)	Week 8	Theoretical (5)	5
4	Monthly Exam (2)	Week 13	Theoretical (15)	15
5	Quest rate.	Seasonal rates are announced at the end of the semester.	Theoretical: (40)	40
6	Final Theoretical Test.	The Week Of Theoretical Exams.	60	60
Total			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Rapid Review of English Grammar 1957
Recommended books and references (scientific journals, reports…)	New Headway - English course English in agriculture1985 oxford bookworms
Electronic References, Websites	translate.yandex.com www.reverso.net /The Library Genesis junkybooks / cole13 / pdfdrive

A.L Raghad Ismail Saeed

Head Of Department

Chairperson of the Scientific Committee

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
English Language 4
2. Course Code:
ENGL 400
3. Semester / Year:
Spring /2024
4. Description Preparation Date:
01/0٢/202٤
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Hours 2 Unit
7. Course administrator's name (mention all, if more than one name)
Name: Omar AbdulHameed Al-Kurjia Email : omarkj @uomosul.edu.iq
8. Course Objectives

Course Objectives	• **To going on studying the English language in special and scientific language** • **Widening student mind about scientific and literature English vocabularies** • **Helping the students to think and write in English**
9. Teaching and Learning Strategies	
Strategy	Making use of the electronic available methods alike auditory or the visual in addition to the white board

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2hours Presence	(a1)The student should be able to know the basics of the English language	Practicing English with " No Place like Home" + Reading out clearly and learning pronunciation + Vocabulary	Electronic lectures, videos, posters and other methods related to learning	Exams Reports Discussions quiz
2	2hours	(a2)The student should	Expat Tales : Ian	Electronic lectures,	Exams -

	Presence	be able to know the tenses of the English language	Walker in Chile: Spoken English informal Reading out, Listening, speaking, everyday English	videos, posters and other methods related to learning	Reports Discussions - quiz
3	2hours Presence	(a3)The student should be able to know the rules of the English language	Expat Tales 2 : Thomas Creed in Korea: Language + conversation with students	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
4	2hours Presence	(a4)The student should be able to know the basics of the English language	Practicing English with " The Blind Assassin" + Reading out clearly and learning pronunciation + Vocabulary	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
5	2hours Presence	(a5)The student should be able to know the basics of the English language	Starting with Sheep" Dealing with English in Agriculture within different specialties (reading and pronunciation)	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
6	2hours Presence	(a6)The student should be able to know the basics of the English language	Language Focus Part 1 English in Agriculture 2 : Homemade butter	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
7	2hours Presence	(a7)The student should be able to know the basics of the English language	Conspiracy Theory 1 : The Death of Diana Reading out, Listening, speaking,	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
8	2hours Presence	(a8)The student should be able to know the basics of the English language	Two Famous Brands : Starbucks Coffee Reading out, Listening, speaking, everyday English	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
9	2hours Presence	(a9)The student should be able to know the basics of the English language	Conspiracy Theory 2 : The Apollo Moon Landings , Reading out, Listening, speaking,	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz

10	2hours Presence	(a10)The student should be able to know the basics of the English language	Cospiracy Theory 3 : The death of JFK ., Reading out, Listening, speaking, everyday English	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
11	2hours Presence	(a11)The student should be able to know the basics of the English language	Apple Macintosh Progressive interaction with students+ feedback+	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
12	2hours Presence	(a12)The student should be able to know the basics of the English language	The Kippers" Read, Digest and Analyze"	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
13	2hours Presence	(a13)The student should be able to know the basics of the English language	The Coldest & Earliest places on Earth Reading out , Translation to Arabic , learning pronunciation	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
14	2hours Presence	(a14)The student should be able to know the basics of the English language	F.R.I.E.N.D.S Past .Reading out , Translation to Arabic , learning pronunciation	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz
15	2hours Presence	(a15)The student should be able to know the basics of the English language	West was Won . Progressive interaction with students+ feedback+	Electronic lectures, videos, posters and other methods related to learning	Exams - Reports Discussions - quiz

11. Course Evaluation

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

No.	Evaluation Methods	Evaluation Date (Week)	Marks	Relative Weight (%)
1	Quiz (1)	Week 4	Theoretical (5)	5
2	Monthly Exam (1)	Week 6	Theoretical (15)	15
3	Quiz (2)	Week 8	Theoretical (5)	5
4	Monthly Exam (2)	Week 13	Theoretical (15)	15
5	Quest rate.	Seasonal rates are announced at the end of the semester.	Theoretical: (40)	40
6	Final Theoretical Test.	The Week Of Theoretical Exams.	60	60
Total			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	New Headway - English course Upper Intermediate 2020

Recommended books and references (scientific journals, reports…)	New Headway - English course Upper Intermediate 2020
Electronic References, Websites	translate.yandex.com www.reverso.net /The Library Genesis junkybooks / cole13 / pdfdrive

A.L. Omar AbdulHameed Al-Kurjia

Head Of Department

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Chairperson of the Scientific Committee

Course Description Form

1. Course Name:
Environment and climate
2. Course Code:
ENCL318
3. Semester / Year:
Spring second semester/ 2023-2024
4. Description Preparation Date:
1/2/2024
5. Available Attendance Forms:
Life in person
6. Number of Credit Hours (Total) / Number of Units (Total)
2 + 3 / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr . Anwer AL-Khero Name: Shaymaa dhayaa Email: shaymaa_dhayaa@uomosul.edu.iq
8. Course Objectives

Course Objectives - Enable the student to understand and comprehend what is related to soil morphology and its relationship to soil science and water resources - Enable the student to know the most important features of the stove - Enable the student to become familiar with the most important factors affecting the development of horizons - Empowering the student with the ability to detect diagnostic horizons - The student can explain the development of horizons and address the differences in results for the future over time	practical: - Enabling the student to become familiar with the most important laboratory methods in studying macro- and micro-morphological characteristics and the important chemical and physical analyzes in distinguishing and studying soil horizons.

9. Teaching and Learning Strategies

Strategy - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting - Presentations of models of soil horiz and their detailed study	practical: - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experimer

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	A1Lecture: knows the principles and foundations of environmental science, climate, and the components of society (what are the departments of environmental science) Familiarizes with the historical development of ecology and ocean factors (what are ocean factors) A9 Practical: Recognizes the principles and foundations of environmental and climate science and related sciences	Lecture: Introduction to ecology, the historical development of ecology and ocean factors Practical: Principles and foundations of environmental and climate science	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
2	2+3	A2Lecture: : Learn about the types of radiation (what are the types of radiation) Recognizes the importance of light for plants (explain the types of light that plants benefit from) Familiarize yourself with the effect of light on plants and trees (Explain the effect of light on	Lecture: energy (radiation) (Radiation) Practical: Elements of climate and its relationship to other sciences	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		plants) A10Practical: understands radiation, units of measurement for wavelengths			
3	2+3	A3Lecture: presents the factors affecting temperatures (what are the factors affecting temperatures) Shows the methods of heat flow (mention the methods of heat flow) It memorizes the preferred and unfavorable temperatures of plants and methods for calculating them (what are the preferred and unfavorable temperatures for plant growth B3Practical: Temperatures, their definition, and methods of storing the thermometers used for measurement	Lecture: Energy (temperatures) Practical: Ecosystem characteristics and temperatures	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
4	2+3	A4Lecture: Identify the effects of atmospheric pressure (and identify the factors that affect atmospheric pressure) Knows the distribution of atmospheric pressure 0 (show	Lecture: Atmospheric pressure Practical: Atmospheric pressure	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		the diagram of the distribution of atmospheric pressure on the Earth) Recognizes the main ranges of atmospheric pressure (to mention the main ranges of atmospheric pressure) A11 Practical: Knows atmospheric pressure, its units, and the factors affecting it			
5	2+3	A5Lecture: Learn about wind movement (mention the types of wind movement) Explains the types of wind and their damage (Explain the damage of wind) He is familiar with the movement of the wind (explain the movement and direction of the wind) A12 Practical: uses wind measurement methods and wind speed measurement units	Lecture: Wind and its effects on plants Practical: Wind	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
6	2+3	A6 Lecture: Explains the types of winds and their damage (Explain the damage of winds) Knows air masses	Lecture: Wind and its effects on plants Practical: Wind measurement methods	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks	Assignments, discussions, Quiz

		and fronts (define air masses and fronts and the difference between them) D4Practical: shows methods of wind measurement and wind speed measurement units with viewing devices		and writing a report	
7	2+3	A7 Lecture: Water and its quantity on the surface of the earth Water cycle in nature Water cycle diagram in nature and source A13Practical: Water knows its importance and distribution	Lecture: Water Practical: the importance of water	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
8	2+3	A8 Lecture: Learn about atmospheric humidity (define atmospheric humidity and methods for calculating it) Familiar with types of humidity (mention the types of air humidity) A14 Practical: Knows relative humidity, its sources, and the factors affecting it	Lecture: Air humidity Practical: Relative humidity	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
9	2+3	B1Lecture: Familiarity with the types of air humidity (calculate	Lecture: Air humidity Practical: Relative humidity	Auditory methods, writing style on the blackboard, direct dialogue method	Assignments, discussions, Quiz

		mathematically the relative humidity) Forms of atmospheric humidity (explain the forms of atmospheric humidity) A15 Practical: is familiar with the types of moisture and methods of extracting it		Practical: Assigning tasks and writing a report	
10	2+3	B2 Lecture: The most important types of precipitation C3Practical: installs a weekly and daily Recording Rain Geese	Lecture: Rain Practical: Rain recorder	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
11	2+3	C1Lecture: Distribution of rainfall in the world D5 Practical: shows the biological factors, their definition and biological divisions	Lecture: Rain Practical: Classifications of biological factors	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
12	2+3	C2Lecture: Plant adaptation to water (plants are divided according to the humidity of the environment) C4 Practical: Identifies clouds and measures the height of the cloud base and its types	Lecture: Plant adaptation to water Practical: the clouds	Lecture:	Assignments, discussions, Quiz
13	2+3	D1 Lecture: Understand plant adaptation to water (explain the structural and physiological	Lecture: Plant adaptation to water Practical: Ecosystem components	Auditory methods, writing style on the blackboard, direct dialogue method Practical:	Assignments, discussions, Quiz

		characteristics of halophytic plants): C5 Practical: The characteristics of the ecosystem justify its divisions and the extent of its importance		Assigning tasks and writing a report	
14	2+3	D2Lecture: Learn about plant adaptation to water (aquatic plants). A16 Practical: distinguishes the layers of the atmosphere, its components, its divisions, and the specifications of each layer	Lecture: Plant adaptation to water Practical: Components of the atmosphere and what ozone is made of	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
15	2+3	D3Lecture: Learn about the applied benefits of fires (mention the benefits of applied fires) Plant adaptations to fire Applied benefits of fires A17 Practical: classifies forest fires by their types and severity	Lecture: Fires and their types Practical: Forest fires	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

Course Evaluation				
No	Evaluation methods	Evaluation date	Grade	Relative weight
1	Theoretical final report + practical experience reports	week 15 week 15	7 + 6	13 %
2	Quiz (1)	Week 3	4 + 2	6 %
3	Midterm Exam	Week 9	10+ 5	15 %
4	Quiz (2)	Week 12	4 + 2	6 %
5	Final practical Exam	Exam week	20	20 %
6	Final Exam	Final Exam week	40	40 %
	Total		100	100 %

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	ECOLOGY
Main references (sources)	Researches
Recommended books and references (scientific journals, reports...)	Papers
Electronic References, Websites	

Assi. Prof. Dr. Dr . Anwer AL-Khero

Assi.Lectu. Shaymaa dhayaa

Prof. Dr.Mohammed AL-Alaf

Head of Scientific Member

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Prof. Dr. Mzahim AL-Bik

Head of Department

Course Description Form

1. Course Name:
Forest Diseases
2. Course Code:
FODI396
3. Semester / Year:
Autumn First Semester / 2023-2024
4. Description Preparation Date:
1 / 9 / 2023
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. anwer noori mohammed Email: aanwer_noori@uomosul.edu.iq Name: Muhannad Hamed younis Email: Muhannad_Hamed@uomosul.edu.iq

8. Course Objectives

Theory : - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multi media. - Developing the student's ability to dialogue and discuss

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	A1 : A1 Memorizes definitions of plant pathology and forest diseases) definition plant pathology(Knows the historical stages) explain the historical stages of forest pathology(Lists the scientists of the modern stage) li the scientists of the modern stage of plant and forest diseases A1	The importance history of plant diseases	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Short practica test

		Learn about plant pathology (define plant disease ،what are the direct losses of the disease.(	Identify plant disease		
2	2Theory 3 Pract	Theory: A2 Knows the losses of plant diseases)describe the losses of plant diseases(Preserves direct plant disease losses) mention direct plant disease losses It saves losses from indirect plant diseases mention the losses from indirect plant diseases(Classify prokaryotic pathogens) give examples of prokaryotic pathogens Familiar with the causes of plant diseases give examples of the causes of plant disea (He is familiar with the ways of living of pathogens) classify the causes according the ways of living(A2 : Plant pathology laboratory numbers	Theory: Losses from plant diseases forest diseases Familiar with how to set up a laboratory (what are the descriptions of a typical laboratory, definition of microscope(	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: :A3: Classify prokaryotic pathogens) give examples of prokaryotic pathogens Familiar with the causes of plant diseases) give examples of the causes of plant diseases(He is familiar with the ways of living of pathogens) classify the causes according to the ways of living(Recognizes the culture media (define the nutrient medium, explain the method of damaging the PDA medium	Theory: Casual agents Types of food environments	Theory : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

4	2Theory 3 Pract	Theory: A4 :Explains the stages of p disease development) mention the stage pollination and examples of it A4: Identifying and isolating fungi (how isolate fungi from roots and soil(	Theory: Stages of plant Disease Development Theory: Isolation of pathogens	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: A5: Classify the types of plant resistance to pathogens) mention definitions of the types of resistance (A5: Explains the symptoms of the disease (explain the apparent symptoms, identify the visible signs of root rot(	Theory Plant defenses types of p resistance Symptoms and si of the disease	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: A6 : :Discusses the environmental factors affecting pathogens) give examples of the division of pathogens according to temperature(Discusses the environmental factors affecting pathogens) give examples of the division of pathogens according to humidity requirements(Discusses the environmental factors affecting pathogens) give examples of the division of pathogens according to humidity requirements(A6: Explains wood rot (define wood rot, distinguish between types of wood rot(	Environmental factors affecting infection Wood rot	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue Style Practical : Assigning tasks and reports	Exams, Homework, Reports
7	2Theory	Theory: A7 :Lists the methods of pathogen resistance) Explain the methods of legislative resistance(Knows the physical methods to combat plant diseases) mention methods sterilization using moist heat(Knows chemical methods of	Theory: Methods of controlling plant diseases and fores diseases	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

	3 Pract	resistance to plant diseases) mention methods of resistance with pesticides and their types(A7 Identify some of the apparent symptoms in the field) distinguish the type of disease(:	A field tour to learn about some apparent diseases:	and reports	
8	2Theory 3 Pract	Theory: A8 :Mention biological methods for disease resistance) explain\ the crop rotation method for control(A8 Diagnosis of fungi (identify cystic fungi, identify the type of fungi	Theory: Methods controlling plant diseases forest diseases Diseases caused by fungi	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: B2 :Familiarity with oomycete diseases) give examples of root rot diseases of forest seedlings(He is familiar with oomycete diseases) give examples of root rot diseases of forest seedlings He is familiar with oomycete diseases mention an example of pythmic root rot its pathogen B1 Diseases caused by basidiomycetes and immature fungi The microscope is used to examine imperfect and basidiophilic fungi	Theory: Division of plant diseases /oomycetes Diseases caused fungi	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: B2 :Familiarity with oomycete diseases) give examples of root rot diseases of fores seedlings(He is familiar with oomycete diseases) give examples of root rot diseases of forest seedlings He is familiar with oomycete diseases) mention an example of pythium root rot a its pathogen C1 Is aware of the most important mycorrhizal fungi (what are the characteristics of mycorrhizal fungi(	Theory: Division plant diseases Mycorrhizal fungi	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: C1 :Caused by chestnut blight) mention the scientific name of the cause of chestnut blight(The disease is known as nectar ulceration mention the scientific name of the cause o nectar ulceration C2 Differentiating between bacteria (bacteria what are the types of bacteria	Theory: Division plant diseases Bacterial disease	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and report	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C2 :Known for basidiomycete fungal diseases on forest trees) mention an example of basidiomycete disease on forest trees He is familiar with tree root rot disease) mention the scientific name of the cause of root rot :Armillaria D1 Distinguish between types of viruses (identify viruses, what are the types of viruses(	Theory: Division plant diseases Viral diseases	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: D1 :Knows viral diseases) mention the scientific name of fig mosaic disease and type of pathogen E1 Learn about nematodes (know nematodes, what is the life cycle of fungal worms	Theory: Bacterial viral disea nematodes parasitic Nematodes	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: D2 :Known as flowering plants parasitize trees) as an example of the catalpa bear and the pine hawk.(Known as flowering plants that parasitize trees) as an example of t mistletoe of forest trees.(E2 A scientific visit to learn about and observe pathological infections	Theory: Parasitic plants on forest trees Field observation field visits	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

15	2Theory 3 Pract	Theory: D3 :Know the fungi that decay deteriorate wood) give examples of white rot fungi(Restores wood decay and deterioration fungi) mention the name for brown fungi(Remembers the fungi that decay ar deteriorate wood) mention examples of rot fungi(List the fungi that decay and deteriorate wood) mention the names of dry rot fungi(Provides a list of fungi that decay deteriorate wood) mention a name for stain fungi(E3 Differentiating between forest nursery diseases(what is the differences between powdery mildew and downy mildew)	Theory: WOOD DEGREDATION Forest nursery diseases	Theory : -Auditory metho -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠
	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	LECTURES OF PLANTS DISEASES AND FORE PATHOLOGY
Main references (sources)	Forest pathology , Boyce , 1960 Guide of field and factory in forest diseases Almaleh etc , 1993
Recommended books and references (scientific journals, reports...)	Phytopathology

Teacher of Theory : Dr. anwer noori mohammed

Teacher of Practical : mohanned hamed younes

Chairman of the Scientific Committee : Dr. mohammed younes al – alaf

Head of the Dept. of Forestry Sciences:Dr. Mozahim Younes Said

Course Description Form

1. Course Name:
Forest economic
2. Course Code:
FOEC498
3. Semester / Year:
spring Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problen of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatio reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical :

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest management
2. Course Code:
FOMA404
3. Semester / Year:
spring Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

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Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
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		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
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	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
Forest measurements
2. Course Code:
FOME300
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ammar Jasim Mohammed Email: ammar_jasim@uomsul.edu.iq Name: Faiza Ali Rasheed Email: faiza_ali@uomosul.edu.iq

8. Course Objectives

Theory : - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the basic concepts of forest science, their applications in various fields, and the relationship between science Analogies with other forest sciences practical :	Theory: General introduction, metrology practical : Delete abnormal data	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

		a9: Knows how to delete Anomalous data by finding Standard deviation of the da		and reports	
2	2Theory 3 Pract	Theory: a2: Familiar with the units used in measurement, how to convert between them, and measurement errors practical : c6: Draw and balance the curve	Theory: Units used in measurement and their systems practical : Draw and balance the curve	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: a3: Understands diameter at dbh, diameter at different levels and diameter measuring devices practical a10: Learn about the devices for measuring the diameter of trees	Theory: Tree variables practical Diameter measurements trees	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a4: Identify tree tables in terms of basal area, average diameter, height and size practical : a11: Finds the basal area of trees and the basal area per unit area	Theory: Tree variables practical : Basal area	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: C1: The measurement of the basal area of trees is applied, measuring the basal area per unit area practical : a12: Learn about the types of devices for measuring tree height and practice measuring height mathematically and in the field	Theory: Stand variables practical : Measuring tree heights	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: a5: Describes the total height, crown center height, crown length, crown width practical : A13: Identify tree variables devices and practice them in the field	Theory: Measuring tree heights practical : Tree variables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

				and reports	
7	2Theory 3 Pract	Theory: c2: Uses height measuring devices practical : a14: He is familiar with the method of determining stem shape and practices it in the field	Theory: Measuring tree heights practical : Estimating the shape of the tree	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: A6: Presents methods for studying the shape of a tree trunk (shape factor, shape point, shape quotient) practical : A15: Determines the age of trees and practices using an age measuring device in field	Theory: Tree stem shape practical : Age of trees	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: a7: Explains volume units, methods for estimating the volume of the solid part of a wooden stack practical : a16: Different methods are used to measure volume	Theory: Volume units used to meas wood practical : Size measurement	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: a8: The measurement of tree sizes is known for the wooden trunks of standing trees practical : c7: Uses different methods to measure volume mathematically	Theory: Measuring tree sizes for the wooden trunks of stand trees practical : Size measurement	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2Theory 3 Pract	Theory: c3: Calculates the size of the tree (mathematical equations, graphical method displacement method, integration) practical : b3: Prepares local size tables	Theory: Measuring the size of trees practical : Size tables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: b1: Prepares tables of local	Theory: size tables	Theory : -Auditory method	Exams, Homework,

		sizes and methods for preparing them practical: b4: Prepares standard size tables	practical : Size tables	-Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Reports
13	2Theory 3 Pract	Theory: b2: Prepares tables of standard sizes and methods for preparing them practical : b5: Prepares form factor tables	Theory: Size tables practical : Form factor tables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: C4: Applies the method of analyzing the stem in terms growth in diameter practical : A14: The computer is used to introduce statistical systems/laboratory	Theory: stem analysis method practical : Statistical system	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Applies the method of analyzing the stem in terms of growth in height practical : c8: The stem is analyzed by measuring tree variables, whether for standing or cut trees / in the field	Theory: stem analysis method practical : stem analysis	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠
	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Forest mensuration

Main references (sources)	Forest mensuration
Recommended books and references (scientific journals, reports...)	

Teacher of Theory : Dr. Ammar Jasim Mohammed

Teacher of Practical : Faiza Ali Reasheed

Chairman of the Scientific Committee : Mohammed Younis Salim Al-Allaf

Head of the Dept. of Forestry Sciences:Dr. Muzahim

Forest nurseries course description

1. Course Name:
Forest Nurseries
2. Course Code:
FONU399
3. Semester / Year:
Autumn- First Semester / 2023-2024(Spring semester)
4. Description Preparation Date:
1/2/ 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units (75 hours)
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Shahla Abd alrazzak basheer/ Theory Email: shahla_abdalrazak@uomosul.edu.iq Mohammed Sameer Idrees/ Practical mohamed.alsawaf@ uomosul .edu.iq

8. Course Objectives	
Theory : - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discu

9. Teaching and Learning Strategies	
Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2Theory 3 Pract.**	**Theory:** a1: Learn about fores nurseries and the most important terms related to nurseries, tree and seedling, types of nurseries and the purpose of establishing and designing them. Seeds **practica**l : a9: Knows the appropriate time to collect	**Theory**: Forest Sylviculture science **practical** : Collect seeds	Interactive lecture, brainstorming, dialogue and discussion, self-learning and reports	Exams, Homework, Reports
2	**2Theory 3 Pract**	**Theory:** a2: Learn about seed trees and their types, choosing seed trees, factors that are take into consideration when	**Theory** :Seed trees **Practical**: Seed extraction	Interactive lecture, brainstorm dialogue discussion, s	Exams, Homework, Reports

		establishing and selecting seed trees. **practical** : a10 Learn about th use of devices used in extractin seeds and how they work		learning and reports	
3	**2Theory 3 Pract**	**Theory:** A3: Learn about determining th area of the arboretum and some terms related to seed trees, Plus stands, Normal stnds, Minus stands.: **practical** ; A11 Identify the types of seeds and know the sh and sizes of some types of fore tree seeds	**Theory:** Seed tree area **Practical**: Seed screening	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
4	**2Theory 3 Pract**	**Theory:** A5: Learn about s storage, types of storage, benefits of storage, seed vita and how to measure vitality. forests **practical** B2: Applies process of examining s viability and seed germinat and calculating the germina percentage	**Theory:** Seed collection **Practical**: time practical application	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
5	**2Theory 3 Pract**	**Theory:** A6: The student understands the meaning of vegetative propagation and methods of vegetative propagation **practical** : :b3 Apply treatments to seeds be planting to break seed dorma and improve germination	**Theory:** Store seeds **Practical** Seed germinatior	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
6	**2Theory 3 Pract**	**Theory**: A7: Distinguish the time of collecting the pens and the methods of using growth regulators for the cutting with sand **Practical** : C3: He fills planting bags and agricult pots	**Theory:** Dormancy in seeds **Practical:** Seed treatment before planting	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
7	**2Theory 3 Pract**	**Theory:** B1: Distinguishes the physiological maturity times of some types of forest trees, and the appropriate time to collect seeds: **practical** : A12: Explains the process of planting seeds in the nursery	**Theory:**Vegetative propagation **Practical** : Practical application in the nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
8	**2Theory 3 Pract**	**Theory:** C1: Explains how to take plant cuttings, the types of cuttings and their	**Theory:** Methods of vegetative propagation **Practical**: Practical	Interactive lecture, brainstorm dialogue	Exams, Homework, Reports

		sources, and the use of growth hormones to root the cuttings **practical** :c4 organizes a scientific visit to the nurseries of the Mosul Municipality	application in the nursery	discussion, s learning and reports	
9	**2Theory 3 Pract**	**Theory:** A4: Learn about seed storage, types of storage, the benefits of storage, seed vitality, and how to measure vitality **practical :** C5: Calculates the germination rate, germination energy, germination rate, and germination speed using germination equations	**Theory:** Time to take cutting and methods Collect nursery **Practical:** it Practical application in the	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
10	**2Theory 3 Pract**	**Theory** :A8: Identify the types of living and non-living fences and their specifications **practical** : b4: Carrying out the process of individualizing the seedlings, taking into account the points that must be taken into account when separating	**Theory**Fences used Nurseries **Practical**: Practical application in nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
11	**2Theory 3 Pract**	**Theory:** d1: Runs discussion panels on developmental processes in the nursery, their importance and types It identifies the most important tillage methods used in the nursery and explains their importance before planting seedlings **practical** b6: Chemical and organic fertilizers are used for various types of forest tree	**Theory:** Developmental processes in nursery **Practical:** practical application	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
12	**2Theory 3 Pract**	**Theory**: E1: Determines the most important tillage methods used in the nursery and explains their importance before planting **Practical**: C6: Organizes a scientific visit to the Nineveh Forest Arboretum	**Theory:**tillage **Practical**: Methods of propagating forest trees	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
13	**2Theory 3 Pract**	**Theory:** c2, d1: Distinguishes between maximum and minimum temperatures and the extent of their impact on plant growth. Explains spring	**Theory:** Irrigation **Practical** Seed treatment before planting and vitality testing	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports

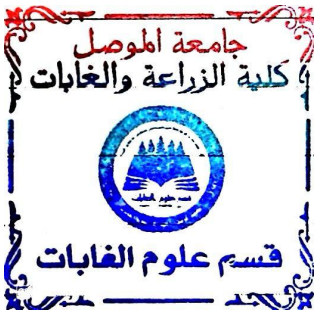
		freeze and presents the types of trees that are tolerant to freeze and those that are not tolerant to freeze. The phenomenon of bare freeze. **practical** : d5: Performs developmental operations in the nursery, pruning and weedingt queen			
14	**2Theory 3 Pract**	**Theory:** C2: Explains the importance of irrigation in nurseries, irrigation systems used inside the canopy and outside the canopy cuttings **practical** c7: He collects and cultivates vertical and root	**Theory**:Fertilization **Practical:** Developmental processes in the nursery Pots used in agriculture	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
15	**2Theory 3 Pract**	**Theory:** C3: Explains the types of fertilizers, fertilization periods, and the extent of the influence of environmental factors on plant fertilization **practical** : b7: Uses hormones (growth regulators) to root the cuttings	**Theory:** Pots used in agriculture **Practica**l Planting and dispersing seeds	Interactive lecture, brainstorm dialogue discussion, self-learning and reports	Exams, Homework, Reports

Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠
	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

11. Learning and Teaching Resources

Forest nurseries	Prof .Dr.Yavuz Shafiq AbdullA/Adel Al-Kanani



Teacher of Theory : Dr. Shahla Abd alrazzak basheer

Mohammed Sameer Idrees/ Practic

Chairman of the Scientific Committee : Muhammad Younis Al-Allaf

Head of the Dept. of Forestry Sciences:Dr. Muzahim

Description course of Forest Physiology

1. Course Name :
Forest Physiology
2. Course Code :
FRPH304
3. Semester/Year:
Second semester / third stage / 2023-2024
4. The date this description was prepared
1-2-2024
5. Available attendance forms
My presence
6. Number of study hours (total)/number of units (total):
2 theoretical hours / 3 practical hours (5 hours) / 3.5 units
7.Name of the course administrator (if more than one name is mentioned)
Munther Younis Muhammad/Nazari M. Dr.. Raghad Abdel Razzaq Jamal/ practical
8.Course objectives
e student learns about the plant cell, its types and components • derstands water relationships and distinguishes between solutions and their types • derstanding the process of water absorption in forest trees as well as the process of • ter loss is familiar with the mineral nutrition that the plant needs and the symptoms of its • ficiency arn about the phloem sap and the mechanism of transport of nutrients within the plant • is familiar with the process of photosynthesis and respiration • arn about the growth and development of trees • is familiar with plant hormones, their types, and their physiological effects • ntify enzymes and vitamins and their benefits for plants • stinguish the physiology of dormancy in seeds and buds •
9.Teaching and learning strategies
Interactive lecture - presentations of anatomical models of tree parts - Brainstorming - assigning specific tasks and preparing reports about them - Dialogue and discussion - self-learning - Field training - practical exercises -
10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week

Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Types of cells and components of the plant cell	A1: plant cell	2 Theoretical	1
A short practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept science PhysiologyPractical experiments on plant cells	A1: science Faslja the plant	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	aTypes of solutions, acids, bases and salts	A2: Solutions and their types	2 Theoretical	2
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	types of solutions,Experiences practical in to prepare Solutions	A2:Solutions the organization And acidity	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Diffusion, osmosis, imbibition and permeability	A3: Water relations	2 Theoretical	3
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Subdivisions Systems Colloids, properties of colloidal systems	B1: Effort Watery And how Measure it In the way Weight	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Water absorption by the roots,Types of absorption,Components of xylem,Mechanism of ascension of wood sap	B1: Water absorption	2 Theoretical	4
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The importance of propagation for plants,Spread Gases And materials Solid And fluids	A3: phenomena Consequences on the pressure Radical	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Ways of losing water,Transpiration and its types,Factors affecting the opening and closing of stomata	A4: Water loss	2 Theoretical	5
Semester test practical test	Interactive lecture, brainstorming, dialogue and	The concept of water potential,Experiences To measure Effort Watery	A4: Importance Breathing With plants	3 practical	

	discussion, self-learning, practical training				
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Types of living organisms and their methods of nutrition,Divisions of nutrients,Ways to absorb nutrients	B2: Mineral nutrition that the plant needs	2 Theoretical	6
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Mineral elements found in the plant,Importance Elements Mineral And symptoms Its lack on the plant	A5: Systems Colloidal	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	ingredients Fabric Cortex, materials Movable in Tissue Cortex, mechanical transition The juicer Food in Bark	A5: bast sap	2 Theoretical	7
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The concept of breathing and its importance,fate energy Resulting from practical Breathing	A6: Transpiration And knock measurement Transpiration	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Chloroplasts, light, plant pigments, stages of the photosynthesis process	B3:practicalPhotosynthesis	2 Theoretical	8
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	microscope installation,Experiences practical To check some Slides	A7: Permeability And the factors Influential on Permeability	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	The importance of breathing, Breathing mechanics	B4: Breathing process	2 Theoretical	9
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	appreciation loss Content Al-Rutoubi Soil, saturation and its conditions	B2:feed the plant And the elements Mineral existing With plants	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Definition of growth, growth dynamics, types of growth, tree life stages	A6: Plant growth and development	2 Theoretical	10

Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The concept of osmosis,an experience practical To clarify osmosis	B3: Microscope And the microscope The compound	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Introduction to plant hormones, auxins, and cytokinins	B6:Plant hormones	2 Theoretical	11
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	to divide Solutions with regards To focus the juice CellularMethods for preparing the normal solution	B4:relationship the plant With water	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Gibberellins and their physiological effects	A8: Plant hormones	2 Theoretical	12
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept The plasma And Its types In addition to Visit Scientific	B5:osmosis And the membrane The resemblance port	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Abscisic acid, ethylene gas	A9: Plant hormones	2 Theoretical	13
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept Permeability And factors Influential on herA practical experiment on permeability	A8: Species Solutions with regards To focus the juice Cellular To plant what	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Benefits of enzymes, properties of enzymes, classification of enzymes, vitamins	B5: Enzymes and vitamins and their benefits for plants	2 Theoretical	14
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Transpiration and methods of measuring it,an experience practical around Importance Stomata	A9: The plasma And its types In addition to Visit Scientific	3 practical	
Semester test Final test	Interactive lecture, brainstorming,	Dormancy in seeds, dormancy in buds	A10: Physiology of dormancy in seeds and	2 Theoretica	15

	dialogue and discussion, self-learning		sprouts	l	
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	tears,an experience practical Show phenomenon Tears	A10: By spreading And its importance For plant	3 practical	

11.Course evaluation

Relative weight %	Class	Calendar date (week)	Calendar methods	T
2.5	2.5	fourth week	Report 1	1
2.5	2.5	The fifth week	Report 2	2
2	2	the sixth week	short test (1)Quiz	3
2	2	The fourteenth week	Short test (2)Quiz	4
1	1	The fifteenth week	Short test (3)Quiz	5
7.5	7.5	the sixth week	Semester test (1)	6
7.5	7.5	The eleventh week is difficult	Semester test (2)	7
40	40	Final semester exams	Final theoretical test	8
5	5	The fifteenth week	Practical field drawing	9
2	2	The third and fifth week	Laboratory evaluation	10
1	1	The first week	Practical short test (1)Quiz	11
0.5	0.5	fourth week	Practical short test (2)Quiz	12
1	1	The fourteenth week	Practical short test (3)Quiz	13
5.5	5.5	Weeks 6, 8, 9, 10, 11, 12 and 13	Live drawings and homework	14
20	20	Final semester exams	Final practical test	15
100%	100%	100	the total	

12.Learning and teaching resources

Plant Physiology Book - Dr. Abdul Azim Kazem Muhammad - 1985 **Practical experiments in plant physiology - Dr. Abdul Azim Kazem Muhammad - 1985**	quired textbooks (methodology, if any)
Physiology of Woody Plants3rd Edition - October 17, 2007 Author: Stephen G. Pallardy •	in references (sources)
	Recommended supporting books and references (scientific journals, reports….)
	ctronic references, Internet sites

actical subject teacher
D. Raghad Abdel Razzaq Jamal

eoretical subject teacher
Munther Younis Muhammad

ad of the Department of Forestry Sciences
. Dr. Muzahim Saeed Younis

airman of the Scientific Committee
. Dr. Muhammad Younis Al-Allaf

Course Description Form

1. Course Name:
Forest planning
2. Course Code:
FOLA497
3. Semester / Year:
forth Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatior reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types c	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest planting
2. Course Code:
FOPL301
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Sumood Husain Ali Email: sumod_husain@uomosul.edu.iq

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatio reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Sumood Husain Ali

Teacher of Practical : Mr. Mohammed Samer Edres

Chairman of the Scientific Committee : Dr. mohammed younes Al – alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
Forest policy
2. Course Code:
FOPO397
3. Semester / Year:
third Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatio reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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6	2Theory 3 Pract	Theory: c1: Explains the types	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
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9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
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	Final exam (practical)	Exam pract.	20	% 20
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			100	% 100

12. Learning and Teaching Resources	
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Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical :

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest project evaluation
2. Course Code:
FOPE403
3. Semester / Year:
forth Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

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4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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6	2Theory 3 Pract	Theory: c1: Explains the types c	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

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13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Description course/ Forest protection

1. Course name:
Forest protection
2. المقرر رمز
FOPR400
3. Semester/Year:
First Semester/Fourth Stage/ 2023-2024
4. The date this description was prepared :
01/09/2023
5. Available attendance form
In-Person
6. Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7. Name of the course administrator (if more than one name is mentioned) :
Dr. Samer Amir Hanna / Theoretical dr. Raghad Abdul Razzaq Jamal/ Practical
8. Course objectives
• The learner should be able to identify the cause of the damage caused by non-living climatic factors • The learner is aware of the developmental service processes necessary to protect trees in the forest . • The learner should be familiar with the weather and climate affecting the spread and distribution of forest trees. • The learner should be aware of the risk of fires as an important factor in forest degradation. • The learner should have the ability to identify damage and prevent extreme factors such as droug wind, heat, humidity, etc.
9. TEACHING AND LEARNING STRATEGIES
- Interactive lecture - Presentations of models of the body of insects - Brainstorming - Assigning specific tasks and preparing reports on them - Dialogue and Discussion - Self-learning - Field Training - Practical Exercises
10. 10. Course Structure

Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	theoretical descriptive	A1 :Learn about the science of forest conservation and its historical background – its functions – its objectives	Defining the science of forest conservation and giving a historical overview of it	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz1 Final Quiz
	3 Practical	A10: Recognizes an introduction to forest conservation science	- Maintenance of Forests;	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2 : Understands the importance of wildfires	forest fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A11 : Familiar with some information on forest degradation and extinction factors	Forest degradation and extinction factors	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct application using available tools
3	2 Theoretical	C1 : Extracts methods to combat forest fires	forest fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A15 : Determines the main effects of temperature on plants in general	Basic Effects of Temperature on Plants	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	View Field
4	2 Theoretical	A3: Draws up a list of the most important machinery and equipment needed to extinguish fires	Machinery and equipment to extinguish fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz,
	3 Practical	E2 : Estimates the severity of forest fires	forest fires	Interactive lecture, brainstorming, dialogue and	Practical Quiz 2,

				discussion, field training, practical exercises, self-learning	Live Drawing
5	2 Theoretical	C2: Shows how to take advantage of fires for forest conservation purposes	Utilization of fires for forest conservation purposes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A12 :Learns how to diagnose plant disease	Pathognomy	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Views from live models
6	2 Theoretical	A4: Determines the damage of gases and fumes and their effects on forests	Gases, fumes and their effects on forests	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	B2: Illustrates the negative effects of acid rain	Negative effects of acid rain	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
7	2 Theoretical	E1: Confirms the harmful effect of toxic gases by examining the leaves and viewing the manifestations of the injury	Diagnosis of adverse effects of toxic fumes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	A14: Knows the bush and ways to combat it	The jungle and ways to combat it	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Figure Presentation
8	theoretical descriptive	A5 : Identify climate factors that are harmful to forests	4.2. Climatic Factors	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	C5: Explains the impact of toxic fumes and gases on forest trees	Effect of fumes and toxic gases on forest trees	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework

9	2 Theoretical	A6 : Identifies damages caused by climatic events	Damage caused by climatic events	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	B3: Document the injury and diagnosis of forests with toxic pollutants	Injury and diagnosis o forests with toxic pollutants	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
10	2 Theoretical	C3 : Concludes preventive measures and measures to reduce the impact of climatic events	Preventive measures t reduce the effects of climatic events	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2
	3 Practical	C6: Clarifies the classification of the highest ranks in insects	Classification of top ranks in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live Drawing Homework
11	2 Theoretical	C4: Shows the most important adverse effects of drought and rain	Adverse effects of drought and rain	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	A18 : characterizes pesticides	Pesticides	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
12	2 Theoretical	A7: Recognize the importance of having a biological balance within the forest	Bio-balance within the forest	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	B4: Identifies the class of winged insects in addition to a scientific visit	Winged insects in addition to a scientific visit	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
13	2 Theoretical	A8 :Determines human damage to forests	Human damage to forests	Interactive lecture, brainstorming, dialogue and	A final test

				discussion, self-learning	
	3 Practical	A17 : Explains the classification of succulent straw insects	Classification of Juice Pipettes Insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
14	2 Theoretical	A9: Schedules the most important harmful plants (jungles) in the forests	Harmful Plants	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A16: Classifies human damage to forests	Human damage to forests	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
15	2 Theoretical	B1: He calls the preventive measures to protect forests from them by mechanical, biological and chemical methods	Preventive measures to protect forests by mechanical, biological and chemical methods	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A13 : Identifies harmful plants	Harmful Plants	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."

11. Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5

3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2
11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (methodology if any	Forestry and Afforestation (1990). Abdullah , Yawaz Shafiq and Adel Ibrahim Al-Kinani . Dar Ibn Al-Athir for Printing and Publishing,224Ministry of Higher Education and Scientific Research.
Key References (Sources)	- None
Recommended supporting books and references (scientific journals, reports…)	None
E-References , Websites	https://arab-ency.com.sy/ency/details/7779/13-1 2- https://www.fao.org/3/cb9363ar/cb9363ar.pdf

Theoretical subject teacher
Dr. Samer Amir Hanna

Practical Instructor
dr. Raghad Abdul Razzaq Jamal

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
Forest Soil
2. Course Code:
FOSO256
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Qahtan Darwish Essa Email: qahtan_darwish@uomosul.edu.iq

8. Course Objectives

Theory : -Enabling the student to know the composition, origin and development of soils - Introducing the student to the physical, chemical and biological properties of soil - Introducing the student to some soil problems, such as salinity and alkalinity and how to treat it	Practical : - Enable the student to learn about collecting soil samples from the field, How to prepare it for laboratory analysis and conduct the most important basic analyses for soil

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: The student Demonstrates concepts Soil science practical : b2 : The student identifies the soil profile	Theory: Introduction to science concepts the soil practical : Move the soil and collect samples from field	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

				and reports	
2	2Theory 3 Pract	Theory: a2: The student gets to know Soil formation practical : a13: The student gets t know Description of soil section	Theory: Origin and development of soil practical : Description of soil section	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: c1: The student learns About the processes of soil formation practical: b3: The student identi a tissue the soil	Theory: Soil formation processe practical : Determine soil texture	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: c2: The student distinguishes the organic layers in soil practical : b4: The student measures the density of the soil	Theory: Organic layers in the soil practical : Estimating soil density	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a3: The student explair the properties Soil physical practical : b5: The student measu the degree of interacti the soil	Theory: Physical properties of soil practical : Estimating the degree of soil interaction	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: a4: The student learns about construction the soil practical : b6: The student measures a ratio Carbonates in soil	Theory: Soil building practical : Estimation of calcium carbonate in the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style	Exams, Homework, Reports

				Practical : Assigning tasks and reports	
7	2Theory 3 Pract	Theory: a5: the student gets to know Soil temperature practical : b7: The student measu a ratio Carbonates and bicarbonates in the soil	Theory: soil temperature practical : determination carbonates bicarbonates in the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: b1: The student identifies a type of water the soil practical : b8: The student measu the content wet.	Theory: Soil water classification practical : Moisture content Measurements for soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: a6: The student distinguishes properti Chemical soil practical : b9: The student measures a ratio Na and K	Theory: Colloids and properties Chemical soil practical : Determination of Na and K	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: a7: The student explair organic colloids practical : b10: The student measures the material membership	Theory: Organic colloids practical : Estimation of soil organic matter	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2Theory 3 Pract	Theory: a8: The student is familiar with the properties of soil Biological practical :	Theory: Soil biological properties practical : Estimation of humic compounds	Theory : -Auditory methods, -Style of writing on The blackboard	Exams, Homework, Reports

		c3: The student discov vehicles Humic	in the soil	-Direct dialogue style Practical : Assigning tasks and reports	
12	2Theory 3 Pract	Theory: a9: The student learns about the salinity and alkalinity soil practical : a14: The student determines soil salinity	Theory: Salinity and alkalinity in the soil practical : Estimation of soil salinity	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: a10: The student is familiar with the effect of salinity on agricultural production practical : b11: The stud measures the soil capacity Cation.	Theory: The effect of soil salinity on agricultural Production practical : Estimation of soil cation capacity	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: a11: The student is familiar with the elements important food practical : c4: The student discovers the extract available elements from the soil	Theory: Important nutrients In the soil practical : Extracting available elements from the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: a12: The student learns about phosphorus and potassium in the soil practical : b12: The student measures phosphorus in the soil	Theory: Phosphorus and Potassium in the soil practical : Determination phosphorus in soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %

	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Book (Soil Science) Dr. Abduallah Al-Aani
Recommended books and references (scientific journals, reports...)	Book (Environmental chemistry of Soil) and (Soil Chemistry)
Electronic References, Websites	**Sposito, G. (2008).** The chemistry of soil. Oxf University Press

Teacher of Theory : Dr. Qahtan Darwish Essa

Teacher of Practical : Mr. Mohammed Aiad Harbawi , Aliaa Abd-Allateef

Chairman of the Scientific Committee :

Head of the Dept. of Forestry Sciences:

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Description Course of Forestry Investment

1. Course Name:
Forestry investment
2. Course code :
FOIN398
3.Semester/Year:
First Semester /Third Stage/2023-2024
4.The date this description was prepared :
1/9/2023
5. 5-Available forms of attendance
In-Person
6.Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7.Name of the course administrator (if more than one name is mentioned) :
Msc. Munther Younis Mohammed / Nazri Dr. Karam Ali Younis / Practical
8 Course Objectives
• Recognize concepts in forestry investment • Familiar with investment processes and ways to perform them • Understand factors influencing tree selection for cutting • Knows the selection of the projection direction of the tree and the projection proc technique • Determines the process of chopping down the projected trees and measuring them for purpose of chopping • Determines how to cut the tree to a larger size and how to cut it to a higher value • Identifies the technique of removing tree branches and the process of peeling the foreski • Concludes preventive measures and measures to reduce the impact of climatic events • Familiarity with the concept of the initial transfer from all sides • Determines the measurement of wooden logs and the process of classifying them • Identifies methods of drying wood
9 |||UNTRANSLATED_CONTENT_START|||التعليم استراتيجيات والتعلم|||UNTRANSLATED_CONTENT_END|||
- Interactive lecture - Practical exercises - Brainstorming - Assigning specific tasks and preparing reports on them - Dialogue and Discussion - Self-learning - |||UNTRANSLATED_CONTENT_START|||التدريب الميداني |||UNTRANSLATED_CONTENT_END|||

10 10. Course Structure					
Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical	A1: Concepts in forestry investment	The importance of investment processes, forest investment plan, investment as a development work	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A1: Concepts in forestry investment		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2: Investment operations and methods of payment	Factors influencing the choice of method of work, level or degree of investment, Voluntary Investment	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B1 : Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
3	2 Theoretical	A3: Dropping forest trees	Factors affecting the selection of trees for cutting, marking trees for the purpose of dropping , organizing teams and dropping yards	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A2: Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
4	2 Theoretical	A4: Dropping forest trees	Projection Direction Selection, Projection Process Technique	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B2 : Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
5	2 Theoretical	A5 : Cutting down fallen trees	Measuring for slicing, slicing for a larger size, slicing for a higher value	Interactive lecture, brainstorming , dialogue and	- A midterm? A final test

				discussion , self-learning	
	3 Practical	A3: Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
6	2 Theoretical	B1 : Cutting down fallen trees	Basal and medial defect cutting, medial defect cutting, cutting process technique	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B3 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
7	2 Theoretical	B2 : Cutting down fallen trees	Removing tree branches, the process of removing foreskin	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A4: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
8	2 Theoretical	B3 : Initial Transportation	The distance of the primary transport , the primary means of transport, the factors affecting the choice of the primary means of transport	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A5 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
9	2 Theoretical	A6: Initial transportation	How to transport trees, stacking yards	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A6: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test

10	2 Theoretical	B4 : Measurement and classification of trunks	Measurement of trunks by weight, measurement of trunk volumes, trunk classification systems	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A7: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
11	2 Theoretical	A7: Drying and evaporation of wood	Drying Methods, Air Drying Accelerated Air Drying, Oven Drying	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A8 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
12	2 Theoretical	B5: Drying and evaporation of wood	Defects of drying, drying test	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A9: Measurement and classification of trunks		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
13	2 Theoretical	A8 : Drying and evaporation of wood	Defects associated with fungal infections, Defects associated with chemical changes in wood	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A10 : Scientific visit		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
14	2 Theoretical	A9: Wood corrosion and preservation	Microbiological erosion, erosion by insects	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B4 : Defects associated with wood drying		Interactive lecture, brainstorming , dialogue and	- A midterm? Laboratory test

				discussion , self-learning , laboratory training	
15	2 Theoretical	A10 : Wood corrosion and preservation	Wood Preservation Methods, Wood Preservatives	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B5: Wood corrosion and preservation		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test

11 Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5
3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2
11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12 Learning and Teaching Resources

Required textbooks (methodology if any)	**Forest Investment Book – Riyadh Saleh Al-Khafaf – Walid Abboudi Kassir – Bassem Abbas Abd Ali - 1993**
Key References (Sources)	Forest Products and Utilization Prof.111 Jeetram Department of Forestry and Environmental Science,
Recommended supporting books and references (scientific journals, reports…)	
E–References , Websites	

Theoretical subject teacher
Eng. Munther Younis Mohammed

Practical Instructor
Prof. Dr. Karam Ali Younis

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis

Course Description Form

1. : Course Name
Freedom and democracy
2. : Course Code
DEHR100
3. Semester / Year : Annual
second semester/second stage/2023-2024
4. Date this description was prepared
1 /2 /2024
5. Available forms of attendance:
Attendance lesson
6. :(Number of study hours (total)/number of units (total
45 hours of theory / 2 hours of theory per week / 2 units
7. (Name of the course administrator (if more than one name is mentioned
Name: Mohammed Zuhair Abdulkareem Email:mohamedzuhair87@uomosul.edu.iq
8. Course objectives
1- Understanding, assimilating and giving students the skill to apply the ideas of democracy and human rights 2- discussion of democracy and human rights topics Expanding the skills of reading , dialogue and 3- Clarifying the most important modern ideas and global, regional and local examples on the topics of . democracy and human rights 4- troducing students to Enabling students to understand and defend civil and political rights, and in .democratic practice and its types as a basis for exercising political rights 5- Creating an understanding and aware generation by enabling it to understand rights and freedoms of all couraging political participation in election, kinds, being able to know democratic practice, and en While enhancing the culture of dialogue and discussion as a method .nomination, and other political rights among students
9. Teaching and learning strategies
- Interactive lecture - Brainstorming - discussion Dialogue and - education -Self - .Education strategy collaborative concept planning

10. Course structure					
the week	hours	Required learning outcomes	Name of the unit or subject	Learning method	Evaluation method
First	2Theoretica	C3: The student should be able to explain phenomena related to the history and development of human rights D1: The student should be able to present information related to human rights and their development D9: Enabling the student with the capabilities of self- and continuous education to develop concepts related to the development of human rights	History of public freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test , final test
Second	2Theoretica	C3: Enabling the student to understand and interpret human rights in heavenly religions D1: Enable the presentation and understanding of information related to human rights D9: Enable the student to present information from several sources on human rights to develop his own concepts	freedoms in heavenly religions	nteractive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test , final test
Third	2Theoretica	C3:Enabling the student to interpret and distinguish between types and forms of human rights D1: The student should be able to present information related to human rights issues D9: The student should be able to present information related to forms of human rights to develop his own concepts D11: The student must be able to defend his rights after knowing them	Forms of public freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, final test,
Fourth	2Theoretica	C3:Enabling the student to understand and interpret modern human rights D1: Enable the student to present information related to modern human rights D11: That the student be able to defend his new rights and take risks	New or modern freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, final test

Fifth	2Theoretica	C3:The student should be able to understand the interpretation of phenomena related to human rights in international governmental organizations D1: The student should be able to present information related to international organizations D9: To be able to develop his information related to international organizations	Freedoms in international governmental organizations organizations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, final test
Sixth	2Theoretica	C3:The student should be able to understand and explain phenomena related to how non-governmental organizations deal with human rights D1: The student should be able to present information related to human rights in non-governmental organizations D11: That the student be able to defend his new rights with the help of non-governmental organizations	Freedoms in non-governmental organizations organizations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, homework, final test
Seventh	2Theoretica	C3:The student should be able to understand and interpret what is related to human rights and freedoms in the Iraqi Constitution in 2005. D9: To be able to develop his information related to international organizations D11: Enabling the student to defend his rights by resorting to responsible authorities and using peaceful means	Freedoms in the Iraqi constitution in 2005	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 2, short test, final test
eighth	2Theoretica	C3:The student should be able to understand and distinguish the types of governments D1: The student should be able to present information related to the types of governments D9: To be able to develop his information related to types of governments	Types of governments	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework assignments and final test
Ninth	2Theoretica	C3The student should be able to understand, explain and distinguish democratic government D1: The student should be able to present	Democratic government	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework, final test

		information related to democratic government D9: To be able to develop his knowledge related to democratic government			
Tenth	2Theoretica	C3:The student should be able to understand and explain the characteristics of democratic government D9: Enable the student to develop his knowledge related to the characteristics of democracy	Characteristics of democracy	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework assignments and final test
Eleventh	2Theoretica	C3:The student should be able to understand, interpret and distinguish images of democratic government D1: The student should be able to present information related to democratic government	Pictures of democratic government	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A short test, a semester test, 2 homework assignments, and a final tes
Twelveth	2Theoretica	C3:The student should be able to understand the interpretation and distinction of indirect democracy D1: The student should be able to present information related to democratic government D9: Enable the student to develop his knowledge related to indirect democracy	Indirect democracy	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, homework, final test
Thirteenth	2Theoretica	C3:The student should be able to understand the interpretation and distinguish the types of ballots D1: The student should be able to display information related to the types of ballots D9: Enable the student to develop his knowledge related to the types of voting D11: Enabling the student to defend his rights related to his participation in universal suffrage by peaceful means.	Types of ballots	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, reports, final exam
Fourteenth	2Theoretica	C3:The student must be able to understand the interpretation and knowledge of the preparatory procedures for the election D1: The student should be able to present information related to election procedures D9: Enable the student to develop his knowledge related to	procedures Preliminary elections	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test

		election procedures D11: The student must be able to publicly defend his rights to participate in the elections			
Fifteenth	2Theoretica	C3:The student should be able to understand, distinguish and explain the types of elections D1: The student should be able to present information related to the types of elections D9: Enabling the student to develop his knowledge related to the types of elections D11: The student must be able to publicly defend his rights to participate in the elections	Types of election	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test

11. Course evaluation:

The grade distribution is out of 100, as the tasks assigned to the student, such as daily preparation, oral, monthly or daily written exams, reports to...etc., are out of 40, which is the semester pursuit rate for the subject. The final theoretical exam is 60 out of 60, as follows:

Number	Calendar methods	Calendar date (week)	degree	Relative weight %
1	Report 1	fourth week	1	1
2	Report 2	The fifth week	1	1
3	Short test (1) Quiz	sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3) Quiz	The fifteenth week	2	2
6	Semester test (1)	the sixth week	8.5	8.5
7	Semester test (2)	The eleventh week	8.5	8.5
8	Short test (4) Quiz	The thirteenth week	2	2
9	Report3	The eighth week	1	1
10	Homework	6,8,9,10,11,12,13	3	3
11	Participations in lectures	All weeks	4	4
12	Short test (5) Quiz	The ninth week	2	2
13	Report (4)	The twelfth week	1	1
14	Short test	The tenth week	2	2
15	Final theoretical test	Final semester exams	60	
	the total	100	100%	100%

12. Learning and teaching resources

Required textbooks (methodology, if any)	. **a-** Relying on the prescribed curricula issued by the Ministry. Among them: The book on human rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2010 **B-** Relying on the curricula prepared by the subject teacher. There is no prescribed book for the subject, but rather there is a set of preparations prepared by the subject teacher based on practical sources related to the subject of human rights, and the lectures were given to the students

Main references (sources)	1. Human Rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2. Universal human rights between theory and practice, written by Jack Donnelly. 3. Human Rights, Children and Democracy, written by: Maher Saleh Allawi Al-Jubouri others. 4. Human Rights and Public Freedoms, written by: Ramez Muhammad Ammar. 5. The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna. 6. The Philosophy of Human Rights, written by Ansam Amer Al-Sudani. 7. The Concept of Contemporary Democracy, written by: Ali Khalifa Al Kuwari. 8. Democracy, written by Charles Tilly , translated by: Muhammad Fadel. 9. Rooted Democracy and the Problem of Implementation, written by: Muhammad Al-Ahmari 10. Parliamentary Governments, written by : John Stuart Mill, translated by: Emile Al-Ghour 11- Electoral Systems, written by: a group of authors.
Recommended supporting books and references (scientific journals, reports....)	1- The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna. 2- -Al The Philosophy of Human Rights, written by Ansam Amer Sudani. 3- Human Rights in the Western Religious Heritage and Islam , written by: Muhammad Jalaa Idris and Amal Muhammad Abd al-Rahman Rabie.
Electronic references, Internet sites	1- The United Nations website: https://www.un.org/ar/global-issues/human-rights 2- The website of the Office of the High Commissioner, United Nations H Commissioner for Human Rights: https://www.ohchr.org/ar/hr-bodies/hrc/home 3- Amnesty International website: https://www.amnesty.org/ 4- UNICEF website: https://www.unicef.org/ar/ 5- International Committee of the Red Cross website: https

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Subject teacher
Mohammed Zuhair Abdulkareem

Course Description Form

1. Course Name:
Genetics
2. Course Code:
GENT212
3. Semester / Year:
Autumn 2nd semester/ 2023-2024
4. Description Preparation Date:
1/2/2024
5. Available Attendance Forms:
Life in person
6. Number of Credit Hours (Total) / Number of Units (Total)
2 + 3 / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr . Omar mdafar Name: Shaymaa dhayaa Email: shaymaa_dhayaa@uomosul.edu.iq
8. Course Objectives

Course Objectives - Enable the student to understand and comprehend what is related to soil morphology and its relationship to soil science and water resources - Enable the student to know the most important features of the stove - Enable the student to become familiar with the most important factors affecting the development of horizons - Empowering the student with the ability to detect diagnostic horizons - The student can explain the development of horizons and address the differences in results for the future over time	practical: - Enabling the student to become familiar with the most important laboratory methods in studying macro- and micro-morphological characteristics and the important chemical and physical analyzes in distinguishing and studying soil horizons.
9. Teaching and Learning Strategies	
Strategy - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting	practical: - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experimer

- Presentations of models of soil horiz and their detailed study	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	A1Lecture: Explains a general overview of genetics, the important basic rules, and its relationships with other sciences A9 Practical: The student knows primitive (undeveloped) cells and true cells (nucleus)	Lecture: Introduction to genetics Practical: Plant cell structure - functions - properties	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
2	2+3	A2 Lecture: Explains how gender determines interest, importance, and other effects A5 Practical: Know the gene (transmitted from parents to offspring), test the pea plant, and Mendel's gene collection.	Lecture: Determine gender Practical: The gene is transmitted from parents to offspring, testing the pea plant and Mendel's collection of genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
3	2+3	A3 Lecture: Distinguish the characteristics of genetic material, determine its nature, and the factors affecting its nature A11 Practical: Define Mendel's first law, the law of free distribution, with examples and experiments, and	Lecture: The nature of the genetic material Practical: The modern scientist Gregor Mendel founded genetics and modifications	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		inverse (backward) multiplication.			
4	2+3	A4 Lecture: lists the development of the concept of the gene, its hereditary nature, its importance and its basic function A12 Practical: Knows the gene, its basis and importance	Lecture: Development of the concept of the gene Practical: Development of the concept of the gene and lethal genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
5	2+3	A5 Lecture: lists permeability, expressivity, and permeable and impermeable cell membranes A13 Practical: Explains chromosomes, genes, and nucleic acids	Lecture: Permeability and expressiveness Practical: Genetic mutations	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
6	2+3	A6 Lecture: Understands identifying genetic mutations, their importance and how they occur - chromosomes - amino acids A14 Practical: lists their importance and the difference between them with functions and importance	Lecture: Genetic mutations Practical: الـDNA , RNA	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
7	2+3	Lecture: A7: Knows the basic substance of protoplasm, its importance, function, and the factors affecting it A15 Practical:	Lecture: The nature and characteristics of genetic material Practical: Cytoplasmic inheritance binomial theory	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		Knows the cytoplasm, which is the basic substance that makes up the protoplasm, and the factors affecting its effectiveness and the functions of the cytoplasm.			
8	2+3	A8 Lecture: Summarizes the genetics and evolution of populations C7 Practical: explains indirect mitosis and its stages and meiosis and its stages	Lecture: Population genetics-- heredity and evolution Practical: Cell division	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
9	2+3	C1 Lecture: Variation in chromosomes explains their importance and functions C8 Practical: Defines incomplete dominance, its absence, and its divisions with examples	Lecture: Variation in chromosome number Practical: Non-Mendelian characteristics and modifications in proportions	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
10	2+3	C2 Lecture: Explains the foundations of Mendelian genetics, its development, and its connections to other sciences C9 Practical: Explains Mendelian characteristics and their correspondence with imperfect masters	Lecture: Mendelian inheritance Practical: Incomplete dominance	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

11	2+3	C3 Lecture: defines the plant cell cycle, its working mechanism, and its importance - the laws of probability and how to use them in Mendelian genetic issues C10 Practical: Explains Mendelian traits and their association with co-dominance	Lecture: Probability laws and their uses in genetic issues - cell mechanics Practical: Shared sovereignty	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
12	2+3	C4 Lecture: identifies genetic traits associated with sex determination D1 Practical: shows its definition, functions, transfer of genetic information, and building proteins	Lecture: Sex-linked traits Practical: Nucleus in plant cell	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
13	2+3	C5 Lecture: Names the bacteria, the nature of the associations, and their association with multiple linked alleles D2 Practical: shows the blood group, the antigen on the surface of the blood cell, and the antibody in the serum, with examples	Lecture: New associations in bacteria with multiple alleles Practical: Method of probability and inheritance of blood groups in humans	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
14	2+3	C6 Lecture: The structure of the DNA strand explains its	Lecture: Structure of the DNA molecule Practical:	Auditory methods, writing style on the blackboard, direct	Assignments, discussions, Quiz

		structure and importance from a genetic standpoint D3 Practical: draws the permeable and impermeable cell membranes and their role in expression within the plant cell	Permeability and expressiveness	dialogue method Practical: Assigning tasks and writing a report	
15	2+3	D1 Lecture: shows relevant genetic associations that are important in determining genetic relatedness and evolution D4 Practical: draws the cell cycle, its phases, divisions, and time periods	Lecture: Inheritance link Practical: Cell cycle	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

Course Evaluation				
No	Evaluation methods	Evaluation date	Grade	Relative weight
1	Theoretical final report + practical experience reports	week 15 week 15	7 + 6	13 %
2	Quiz (1)	Week 3	4 + 2	6 %
3	Midterm Exam	Week 9	10+ 5	15 %
4	Quiz (2)	Week 12	4 + 2	6 %
5	Final practical Exam	Exam week	20	20 %
6	Final Exam	Final Exam week	40	40 %
	Total		100	100 %

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Genetics
Main references (sources)	Researches
Recommended books and references (scientific journals, reports...)	Papers
Electronic References, Websites	

Prof. Dr. Omar modafer Assi.Lectu. Shaymaa dhayaa

Prof. Dr. Mohammed AL-Alaf Pro. Dr. Mozahim Younis

Head of Scientific Member Head of Department

Description course / forest insects

1. Course name:
Forest insects
2. Course code:
FOIN259
3. Semester/Year:
Second Semester/Second Stage/ 2023-2024
4. The date this description was prepared :
01/02/2024
5. Available attendance form
In-Person
6. Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7. Name of the course administrator (if more than one name is mentioned) :
Dr. Samer Ameer Hanna / Theoretical dr. Raghad Abdul Razzaq Jamal / Practical
8. Course objectives
• The learner should be able to identify harmful and beneficial insects • Knowing the impact ofweather and climate on the spread and distribution of insects • Familiarity with the main causes that lead to insect epidemics • Identify the types of control programs that will reduce injuries below the level of economic damage • Distinguish between types of chemical insecticides and use the best ones • The learner's awareness of the taxonomic ranks of forest insect families, which saves time and effort when combating them • Determine the appropriate type of insect traps that can be used in forests and nurseries
9. TEACHING AND LEARNING STRATEGIES
- Interactive lecture - Brainstorming - Dialogue and Discussion - Field Training - Presentations of models of the body of insects - Assigning specific tasks and preparing reports on them - Self-learning - Practical Exercises

10. 10. Course Structure

Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical	A1 : Recognize the location and importance of taxonomic insects	Insect taxonomic site and its importance	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz1 Final Quiz
	3 Practical	A11: Identifies the most important classifications of insects	Taxonomic Rankings For insects	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2 : Familiar with an introduction to forest entomology	Introduction to Entom Mossy Woods	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A12: Familiar with insect collection methods	Methods of collecting	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct application using available tools
3	2 Theoretical	A3: Identifies damage caused by insect pests in the forest	Damage caused by Firstly: Insect pests: (EXHALING) In the \	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A13 : Identifies insect antennae	Methods of keeping	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	View Field
4	2 Theoretical	A4: Identifies vital factors affecting insect distribution	bio factors	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz,
	3 Practical	B3: Examine the area of the head in insects and its parts	Header Area In insects and its pa	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical Quiz 2, Live Drawing

5	2 Theoretical	A5:Recognize forest insects control	Resistance to forest Forest insects Control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A13 : Identifies insect antennae	Antenna For insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Views from live models
6	2 Theoretical	A6: Summarizes the impact of parasitism in insects	Insect parasitism	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	B2: Explains the parts of the mouth in insects	Parts of the mouth in i	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
7	2 Theoretical	A7: Determines the impact of legislative control on the spread of insects	Legislative control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	A15 : Mention the role of the chest and its accessories in insects	Wings in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Figure Presentation
8	2 Theoretical	A8: Identifies direct biological control	|||UNTRANSLATED_ART||| المكافحة الحيوية|||UNTRANSLA_END||| Direct Biological control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	C4: Explains the presence of simple and compound eyes in insect species	Eyes in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
9	2 Theoretical	C1: Analyzes how pesticides are divided according to how they enter the insect's body	Division of pesticides by How it enters the insect's	Interactive lecture, brainstorming, dialogue and discussion, self-	Quarterly Quiz 2, Final Quiz

			body	learning	
	3 Practical	C5 : Shows the function of the abdomen and its accessories in insects	Abdomen & Accessor	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
10	2 Theoretical	C2 : Uses scientific names to identify attractants and repellents	Attractants and repellents	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2
	3 Practical	C6: Clarifies the functions of the legs and their parts	Legs in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live Drawing Homework
11	2 Theoretical	C3: Explains the most important methods of integrated control	Integrated Resistance Integrated control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	C7: Chronology of insect phases	Evolution in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
12	2 Theoretical	A9: Recognize the nature of nutrition in leaf food	Nutrition Natures in Leaf Food	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	C8: Detects insect infestations with a scientific visit to the forest	Discovering insect ir forest in addition to a	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
13	2 Theoretical	D1 : Moderates panel discussions on leaf-eating insect species	Insect species Not like knives, beca dull,	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	A18 : Explains the ranks and ranks of insects	Under an insect que Wingless	Interactive lecture, brainstorming, dialogue and discussion, field	– Homework

				training, practical exercises, self-learning	.
14	2 Theoretical	B1: Looks for damage caused by leaf binders insects	Paper Associations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A17: Classify winged insects	Under Row Winged Insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
15	2 Theoretical	A10: Describes bark, bark and wood bark insects/bark beetle species	Foreskin and Bark Insects wood / types of bark beetles	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A14: Identifies insects inside wing growth	- Really? Interior of the wings	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."

11. Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5
3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2

11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (methodology if any	**Swailem , Saleh Muhammad and Ismail Najm al-Maarouf (1981) .Forest insects. Ministry of Higher Education and Scientific Research, Dar Al-Kutub Foundation for Printing and Publishing - Mosul University.**
Key References (Sources)	- None
Recommended supporting books and references (scientific journals, reports…)	None
E−References , Websites	https://www.noor-book.com/tag/ % D8% B9% D9% 84% D9 85-% D8% AD % D8% B4% D8% B1% D8% A7% D8% AA- D8% A7% D9% 84% D8% AB % D8% A7% D8% A8% D8 A7% D8%

Theoretical subject teacher
Dr. Samer Amir Hanna

Practical Instructor
dr. Raghad Abdul Razzaq Jamal

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis

جامعة الموصل
كلية الزراعة والغابات
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Course Description Form

1. Course Name:
Forest management
2. Course Code:
FOMA404
3. Semester / Year:
spring Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatior reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types c	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest measurements
2. Course Code:
FOME300
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ammar Jasim Mohammed Email: ammar_jasim@uomsul.edu.iq Name: Faiza Ali Rasheed Email: faiza_ali@uomosul.edu.iq

8. Course Objectives

Theory : - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the basic concepts of forest science, their applications in various fields, and the relationship between science Analogies with other forest sciences practical :	Theory: General introduction, metrology practical : Delete abnormal data	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

		a9: Knows how to delete Anomalous data by finding Standard deviation of the da		and reports	
2	2Theory 3 Pract	Theory: a2: Familiar with the units used in measurement, how to convert between them, and measurement errors practical : c6: Draw and balance the curve	Theory: Units used in measurement and their systems practical : Draw and balance the curve	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: a3: Understands diameter at dbh, diameter at different levels and diameter measuring devices practical a10: Learn about the devices for measuring the diameter of trees	Theory: Tree variables practical Diameter measurements trees	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a4: Identify tree tables in terms of basal area, average diameter, height and size practical : a11: Finds the basal area of trees and the basal area per unit area	Theory: Tree variables practical : Basal area	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: C1: The measurement of the basal area of trees is applied, measuring the basal area per unit area practical : a12: Learn about the types of devices for measuring tree height and practice measuring height mathematically and in the field	Theory: Stand variables practical : Measuring tree heights	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: a5: Describes the total height, crown center height, crown length, crown width practical : A13: Identify tree variables devices and practice them in the field	Theory: Measuring tree heights practical : Tree variables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

				and reports	
7	2Theory 3 Pract	Theory: c2: Uses height measuring devices practical : a14: He is familiar with the method of determining stem shape and practices it in the field	Theory: Measuring tree heights practical : Estimating the shape of the tree	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: A6: Presents methods for studying the shape of a tree trunk (shape factor, shape point, shape quotient) practical : A15: Determines the age of trees and practices using an age measuring device in field	Theory: Tree stem shape practical : Age of trees	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: a7: Explains volume units, methods for estimating the volume of the solid part of a wooden stack practical : a16: Different methods are used to measure volume	Theory: Volume units used to meas wood practical : Size measurement	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: a8: The measurement of tree sizes is known for the wooden trunks of standing trees practical : c7: Uses different methods to measure volume mathematically	Theory: Measuring tree sizes for the wooden trunks of stand trees practical : Size measurement	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2Theory 3 Pract	Theory: c3: Calculates the size of the tree (mathematical equations, graphical method displacement method, integration) practical : b3: Prepares local size tables	Theory: Measuring the size of trees practical : Size tables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: b1: Prepares tables of local	Theory: size tables	Theory : -Auditory method	Exams, Homework,

		sizes and methods for preparing them practical: b4: Prepares standard size tables	practical : Size tables	-Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Reports
13	2Theory 3 Pract	Theory: b2: Prepares tables of standard sizes and methods for preparing them practical : b5: Prepares form factor tables	Theory: Size tables practical : Form factor tables	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: C4: Applies the method of analyzing the stem in terms growth in diameter practical : A14: The computer is used to introduce statistical systems/laboratory	Theory: stem analysis method practical : Statistical system	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Applies the method of analyzing the stem in terms of growth in height practical : c8: The stem is analyzed by measuring tree variables, whether for standing or cut trees / in the field	Theory: stem analysis method practical : stem analysis	Theory : -Auditory method -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠
	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Forest mensuration

Main references (sources)	Forest mensuration
Recommended books and references (scientific journals, reports...)	

Teacher of Theory : Dr. Ammar Jasim Mohammed

Teacher of Practical : Faiza Ali Reasheed

Chairman of the Scientific Committee : Mohammed Younis Salim Al-Allaf

Head of the Dept. of Forestry Sciences:Dr. Muzahim

Forest nurseries course description

1. Course Name:
Forest Nurseries
2. Course Code:
FONU399
3. Semester / Year:
Autumn- First Semester / 2023-2024(Spring semester)
4. Description Preparation Date:
1/2/ 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units (75 hours)
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Shahla Abd alrazzak basheer/ Theory Email: shahla_abdalrazak@uomosul.edu.iq Mohammed Sameer Idrees/ Practical mohamed.alsawaf@ uomosul .edu.iq

8. Course Objectives	
Theory : - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discu

9. Teaching and Learning Strategies	
Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2Theory 3 Pract.**	**Theory:** a1: Learn about fores nurseries and the most important terms related to nurseries, tree and seedling, types of nurseries and the purpose of establishing and designing them. Seeds **practica**l : a9: Knows the appropriate time to collect	**Theory**: Forest Sylviculture science **practical** : Collect seeds	Interactive lecture, brainstorming, dialogue and discussion, self-learning and reports	Exams, Homework, Reports
2	**2Theory 3 Pract**	**Theory:** a2: Learn about seed trees and their types, choosing seed trees, factors that are take into consideration when	**Theory** :Seed trees **Practical**: Seed extraction	Interactive lecture, brainstorm dialogue discussion, s	Exams, Homework, Reports

		establishing and selecting seed trees. **practical** : a10 Learn about th use of devices used in extractin seeds and how they work		learning and reports	
3	**2Theory 3 Pract**	**Theory:** A3: Learn about determining th area of the arboretum and some terms related to seed trees, Plus stands, Normal stnds, Minus stands.: **practical** ; A11 Identify the types of seeds and know the sh and sizes of some types of fore tree seeds	**Theory:** Seed tree area **Practical**: Seed screening	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
4	**2Theory 3 Pract**	**Theory:** A5: Learn about s storage, types of storage, benefits of storage, seed vita and how to measure vitality. forests **practical** B2: Applies process of examining s viability and seed germinat and calculating the germina percentage	**Theory:** Seed collection **Practical**: time practical application	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
5	**2Theory 3 Pract**	**Theory:** A6: The student understands the meaning of vegetative propagation and methods of vegetative propagation **practical** : :b3 Apply treatments to seeds be planting to break seed dorma and improve germination	**Theory:** Store seeds **Practical** Seed germinatior	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
6	**2Theory 3 Pract**	**Theory**: A7: Distinguish the time of collecting the pens and the methods of using growth regulators for the cutting with sand **Practical** : C3: He fills planting bags and agricult pots	**Theory:** Dormancy in seeds **Practical:** Seed treatment before planting	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
7	**2Theory 3 Pract**	**Theory:** B1: Distinguishes the physiological maturity times of some types of forest trees, and the appropriate time to collect seeds: **practical** : A12: Explains the process of planting seeds in the nursery	**Theory:**Vegetative propagation **Practical** : Practical application in the nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
8	**2Theory 3 Pract**	**Theory:** C1: Explains how to take plant cuttings, the types of cuttings and their	**Theory:** Methods of vegetative propagation **Practical**: Practical	Interactive lecture, brainstorm dialogue	Exams, Homework, Reports

		sources, and the use of growth hormones to root the cuttings **practical** :c4 organizes a scientific visit to the nurseries of the Mosul Municipality	application in the nursery	discussion, s learning and reports	
9	**2Theory 3 Pract**	**Theory:** A4: Learn about seed storage, types of storage, the benefits of storage, seed vitality, and how to measure vitality **practical :** C5: Calculates the germination rate, germination energy, germination rate, and germination speed using germination equations	**Theory:** Time to take cutting and methods Collect nursery **Practical:** it Practical application in the	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
10	**2Theory 3 Pract**	**Theory** :A8: Identify the types of living and non-living fences and their specifications **practical** : b4: Carrying out the process of individualizing the seedlings, taking into account the points that must be taken into account when separating	**Theory**Fences used Nurseries **Practical**: Practical application in nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
11	**2Theory 3 Pract**	**Theory:** d1: Runs discussion panels on developmental processes in the nursery, their importance and types It identifies the most important tillage methods used in the nursery and explains their importance before planting seedlings **practical** b6: Chemical and organic fertilizers are used for various types of forest tree	**Theory:** Developmental processes in nursery **Practical:** practical application	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
12	**2Theory 3 Pract**	**Theory**: E1: Determines the most important tillage methods used in the nursery and explains their importance before planting **Practical**: C6: Organizes a scientific visit to the Nineveh Forest Arboretum	**Theory:**tillage **Practical**: Methods of propagating forest trees	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
13	**2Theory 3 Pract**	**Theory:** c2, d1: Distinguishes between maximum and minimum temperatures and the extent of their impact on plant growth. Explains spring	**Theory:** Irrigation **Practical** Seed treatment before planting and vitality testing	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports

		freeze and presents the types of trees that are tolerant to freeze and those that are not tolerant to freeze. The phenomenon of bare freeze. **practical** : d5: Performs developmental operations in the nursery, pruning and weedingt queen			
14	**2Theory 3 Pract**	**Theory:** C2: Explains the importance of irrigation in nurseries, irrigation systems used inside the canopy and outside the canopy cuttings **practical** c7: He collects and cultivates vertical and root	**Theory**:Fertilization **Practical:** Developmental processes in the nursery Pots used in agriculture	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
15	**2Theory 3 Pract**	**Theory:** C3: Explains the types of fertilizers, fertilization periods, and the extent of the influence of environmental factors on plant fertilization **practical** : b7: Uses hormones (growth regulators) to root the cuttings	**Theory:** Pots used in agriculture **Practica**l Planting and dispersing seeds	Interactive lecture, brainstorm dialogue discussion, self-learning and reports	Exams, Homework, Reports

Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠
	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

11. Learning and Teaching Resources

Forest nurseries	Prof .Dr.Yavuz Shafiq AbdullA/Adel Al-Kanani

Teacher of Theory : Dr. Shahla Abd alrazzak basheer

Mohammed Sameer Idrees/ Practic

Chairman of the Scientific Committee : Muhammad Younis Al-Allaf

Head of the Dept. of Forestry Sciences:Dr. Muzahim

Description course of Forest Physiology

1. Course Name :
Forest Physiology
2. Course Code :
FRPH304
3. Semester/Year:
Second semester / third stage / 2023-2024
4. The date this description was prepared
1-2-2024
5. Available attendance forms
My presence
6. Number of study hours (total)/number of units (total):
2 theoretical hours / 3 practical hours (5 hours) / 3.5 units
7.Name of the course administrator (if more than one name is mentioned)
Munther Younis Muhammad/Nazari M. Dr.. Raghad Abdel Razzaq Jamal/ practical
8.Course objectives
e student learns about the plant cell, its types and components • derstands water relationships and distinguishes between solutions and their types • derstanding the process of water absorption in forest trees as well as the process of • ter loss is familiar with the mineral nutrition that the plant needs and the symptoms of its • ficiency arn about the phloem sap and the mechanism of transport of nutrients within the plant • is familiar with the process of photosynthesis and respiration • arn about the growth and development of trees • is familiar with plant hormones, their types, and their physiological effects • ntify enzymes and vitamins and their benefits for plants • stinguish the physiology of dormancy in seeds and buds •
9.Teaching and learning strategies
Interactive lecture - presentations of anatomical models of tree parts - Brainstorming - assigning specific tasks and preparing reports about them - Dialogue and discussion - self-learning - Field training - practical exercises -
10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week

Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Types of cells and components of the plant cell	A1: plant cell	2 Theoretical	1
A short practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept science PhysiologyPractical experiments on plant cells	A1: science Faslja the plant	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	aTypes of solutions, acids, bases and salts	A2: Solutions and their types	2 Theoretical	2
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	types of solutions,Experiences practical in to prepare Solutions	A2:Solutions the organization And acidity	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Diffusion, osmosis, imbibition and permeability	A3: Water relations	2 Theoretical	3
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Subdivisions Systems Colloids, properties of colloidal systems	B1: Effort Watery And how Measure it In the way Weight	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Water absorption by the roots,Types of absorption,Components of xylem,Mechanism of ascension of wood sap	B1: Water absorption	2 Theoretical	4
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The importance of propagation for plants,Spread Gases And materials Solid And fluids	A3: phenomena Consequences on the pressure Radical	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Ways of losing water,Transpiration and its types,Factors affecting the opening and closing of stomata	A4: Water loss	2 Theoretical	5
Semester test practical test	Interactive lecture, brainstorming, dialogue and	The concept of water potential,Experiences To measure Effort Watery	A4: Importance Breathing With plants	3 practical	

	discussion, self-learning, practical training				
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Types of living organisms and their methods of nutrition,Divisions of nutrients,Ways to absorb nutrients	B2: Mineral nutrition that the plant needs	2 Theoretical	6
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Mineral elements found in the plant,Importance Elements Mineral And symptoms Its lack on the plant	A5: Systems Colloidal	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	ingredients Fabric Cortex, materials Movable in Tissue Cortex, mechanical transition The juicer Food in Bark	A5: bast sap	2 Theoretical	7
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The concept of breathing and its importance,fate energy Resulting from practical Breathing	A6: Transpiration And knock measurement Transpiration	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Chloroplasts, light, plant pigments, stages of the photosynthesis process	B3:practicalPhotosynthesis	2 Theoretical	8
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	microscope installation,Experiences practical To check some Slides	A7: Permeability And the factors Influential on Permeability	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	The importance of breathing, Breathing mechanics	B4: Breathing process	2 Theoretical	9
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	appreciation loss Content Al-Rutoubi Soil, saturation and its conditions	B2:feed the plant And the elements Mineral existing With plants	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Definition of growth, growth dynamics, types of growth, tree life stages	A6: Plant growth and development	2 Theoretical	10

Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	The concept of osmosis,an experience practical To clarify osmosis	B3: Microscope And the microscope The compound	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Introduction to plant hormones, auxins, and cytokinins	B6:Plant hormones	2 Theoretical	11
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	to divide Solutions with regards To focus the juice CellularMethods for preparing the normal solution	B4:relationship the plant With water	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Gibberellins and their physiological effects	A8: Plant hormones	2 Theoretical	12
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept The plasma And Its types In addition to Visit Scientific	B5:osmosis And the membrane The resemblance port	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Abscisic acid, ethylene gas	A9: Plant hormones	2 Theoretical	13
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Concept Permeability And factors Influential on herA practical experiment on permeability	A8: Species Solutions with regards To focus the juice Cellular To plant what	3 practical	
Semester test Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Benefits of enzymes, properties of enzymes, classification of enzymes, vitamins	B5: Enzymes and vitamins and their benefits for plants	2 Theoretical	14
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	Transpiration and methods of measuring it,an experience practical around Importance Stomata	A9: The plasma And its types In addition to Visit Scientific	3 practical	
Semester test Final test	Interactive lecture, brainstorming,	Dormancy in seeds, dormancy in buds	A10: Physiology of dormancy in seeds and	2 Theoretica	15

	dialogue and discussion, self-learning		sprouts	l	
Semester test practical test	Interactive lecture, brainstorming, dialogue and discussion, self-learning, practical training	tears,an experience practical Show phenomenon Tears	A10: By spreading And its importance For plant	3 practical	

11.Course evaluation

Relative weight %	Class	Calendar date (week)	Calendar methods	T
2.5	2.5	fourth week	Report 1	1
2.5	2.5	The fifth week	Report 2	2
2	2	the sixth week	short test (1)Quiz	3
2	2	The fourteenth week	Short test (2)Quiz	4
1	1	The fifteenth week	Short test (3)Quiz	5
7.5	7.5	the sixth week	Semester test (1)	6
7.5	7.5	The eleventh week is difficult	Semester test (2)	7
40	40	Final semester exams	Final theoretical test	8
5	5	The fifteenth week	Practical field drawing	9
2	2	The third and fifth week	Laboratory evaluation	10
1	1	The first week	Practical short test (1)Quiz	11
0.5	0.5	fourth week	Practical short test (2)Quiz	12
1	1	The fourteenth week	Practical short test (3)Quiz	13
5.5	5.5	Weeks 6, 8, 9, 10, 11, 12 and 13	Live drawings and homework	14
20	20	Final semester exams	Final practical test	15
100%	100%	100	the total	

12.Learning and teaching resources

Plant Physiology Book - Dr. Abdul Azim Kazem Muhammad - 1985 **Practical experiments in plant physiology - Dr. Abdul Azim Kazem Muhammad - 1985**	quired textbooks (methodology, if any)
Physiology of Woody Plants3rd Edition - October 17, 2007 Author: Stephen G. Pallardy •	in references (sources)
	Recommended supporting books and references (scientific journals, reports….)
	ctronic references, Internet sites

actical subject teacher
D. Raghad Abdel Razzaq Jamal

eoretical subject teacher
Munther Younis Muhammad

ad of the Department of Forestry Sciences

. Dr. Muzahim Saeed Younis

airman of the Scientific Committee

. Dr. Muhammad Younis Al-Allaf

Course Description Form

1. Course Name:
Forest planning
2. Course Code:
FOLA497
3. Semester / Year:
forth Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatior reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types c	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest planting
2. Course Code:
FOPL301
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Sumood Husain Ali Email: sumod_husain@uomosul.edu.iq

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatio reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
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	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Sumood Husain Ali

Teacher of Practical : Mr. Mohammed Samer Edres

Chairman of the Scientific Committee : Dr. mohammed younes Al – alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Course Description Form

1. Course Name:
Forest policy
2. Course Code:
FOPO397
3. Semester / Year:
third Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

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6	2Theory 3 Pract	Theory: c1: Explains the types	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
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10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
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		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical :

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Course Description Form

1. Course Name:
Forest project evaluation
2. Course Code:
FOPE403
3. Semester / Year:
forth Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammad Asim Saeed

8. Course Objectives

Theory : The student should be able to determine the economic and environmental importance of forests and afforestation - It aims to ensure the sustainability and continu of forests to benefit from them economically and environmentally - Familiarity with the most important, best and best methods of trees - Introducing the student to some of the problem of planting seedlings according to different locations And how to treat it - Methods of reforestation of cut and burned forests	Practical : The practical afforestation course aims to info students and see the types of forest trees used reforestation of arid areas and stabilization sand dunes, how to make windbreaks, and practical application of afforestation operati in open areas and reforestation of forest are and to train students on developmental sustaining processes for the trees growing in nursery.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the principles and foundations of plantati	Theory: Principles of afforestati And some scientific ter practical :	Theory : -Auditory methods, -Style of	Exams, Homework, Reports

		practical : a6: Learn about the typ of forests and importar	Introducing forests an their importance	writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	
2	2Theory 3 Pract	Theory: a2: aware of the importance of afforestation in reduci urban pollution practical : a7: Learn about seed dispersal methods and seedling planting methods	Theory: The role of afforestatio reducing environmenta pollution Practical: Methods of afforestation, including seed dispersal and seedling planting	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: e1: Determines how afforestation works to alleviate poverty in developing countries practical: A8: Learn about the typ of forest tree seeds and methods of treating the	Theory: The role of forests in alleviating poverty in developing countries Practical: Identifying th types of seeds and methods of treating the before sowing	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a3: Learn about the necessary procedures before planting trees practical : b2: Students document the types of forest tree and calculate the distances between tree	Theory: Tree planting methods: First, by scattering seed Practical: examining the types of trees and determining the appropriate planting distances	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a4: Learn about the treatments on seedling before starting plantin and the methods of planting practical : d1: Application in the nursery to the process dispersing seeds in bed bags, and pots	Theory: Methods of afforestatio Secondly, planting seedlings Practical: scattering see in beds, pots, and bags	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: c1: Explains the types c	Theory: Methods of planting bar	Theory : -Auditory	Exams, Homework,

		bare-rooted seedlings a methods of planting practical : a9: Identify the types o forest trees suitable fo planting and planting i arid areas	rooted seedlings Practical: planting windbreaks and protective belts	methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Reports
7	2Theory 3 Pract	Theory: b1: Organizes a scientif visit to natural forests northern Iraq practical : a10: Identify forest tre suitable for planting windbreaks and protective belts	Theory: A scientific visit to fores areas in Dohuk Governorate, Mata Arboretum and Zawita Forests practical : Applying some planting methods in natural fore	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: a5: Learn about windbreaks, their type importance, and conditions for their application practical : c6: A practical applicat on planting windbreak and green belts	Theory: Windbreaks and green belts Practical: planting windbreaks and protective belts	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: c2: Explains the metho used to stabilize coasta sand dunes practical : a11: Identify the types forest trees suitable fo planting slopes and rugged areas	Theory: Afforestation and stabilization of coastal sand dunes practical : Afforestation of slopes a rugged areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: e2: Justifies the importance of stabilizi sand dunes in arid and semi-arid areas practical : a12: Afforestation of ar and semi-arid areas	Theory: Afforestation of arid an semi-arid areas practical : Afforestation of arid an semi-arid areas	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11	2Theory 3 Pract	Theory: c3: He proposes a scientific visit to the Nineveh Forest practical : c7: He proposes a scientific visit to the Nineveh Forest	Theory: A scientific visit to the forests of Nineveh Practical: stabilizing sa dunes	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2Theory 3 Pract	Theory: C4: Explains the types plots according to the purpose of creating the practical : A13: Learn about ways stabilize sand dunes	Theory: Types of stands practical : Practical application: planting seedlings in th nursery	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: e3: Justifies the importance of afforestation of slopes reduce erosion practical : c8: Practical applicat of planting seedlings the nursery	Theory: Afforestation of slopes agricultural terraces) Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: e4: Determines the standards and foundations of afforestation within cit practical : c9: Practical applicatio of planting seedlings o public roads	Theory: Afforestation of cities, roads, and central islan Practical: Practical application of planting seedlings on public roa	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: c5: Shows the most important types of tree and shrubs that are suitable for afforestati in Iraq practical : c10: Practical applicati of planting seedlings o	Theory: The most important tre and shrubs used in landscaping in Iraq, the specifications and importance practical : Practical application: planting seedlings on	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical :	Exams, Homework, Reports

		public roads	public roads	Assigning tasks and reports	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	The Planting Design Handbook Propagating and planting trees
Recommended books and references (scientific journals, reports...)	Many articles and research published in publish houses such as Springer + Elsevier + SPRINGER NATURE)
Electronic References, Websites	Various sites on the Internet

Teacher of Theory : Dr. Mohammad Asim Saeed

Teacher of Practical : Dr. Mohammad Asim Saeed

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

Description course/ Forest protection

1. Course name:
Forest protection
2. المقرر رمز
FOPR400
3. Semester/Year:
First Semester/Fourth Stage/ 2023-2024
4. The date this description was prepared :
01/09/2023
5. Available attendance form
In-Person
6. Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7. Name of the course administrator (if more than one name is mentioned) :
Dr. Samer Amir Hanna / Theoretical dr. Raghad Abdul Razzaq Jamal/ Practical
8. Course objectives
• The learner should be able to identify the cause of the damage caused by non-living climatic factors • The learner is aware of the developmental service processes necessary to protect trees in the forest . • The learner should be familiar with the weather and climate affecting the spread and distribution of forest trees. • The learner should be aware of the risk of fires as an important factor in forest degradation. • The learner should have the ability to identify damage and prevent extreme factors such as droug wind, heat, humidity, etc.
9. TEACHING AND LEARNING STRATEGIES
- Interactive lecture - Presentations of models of the body of insects - Brainstorming - Assigning specific tasks and preparing reports on them - Dialogue and Discussion - Self-learning - Field Training - Practical Exercises
10. 10. Course Structure

Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	theoretical descriptive	A1 :Learn about the science of forest conservation and its historical background – its functions – its objectives	Defining the science of forest conservation and giving a historical overview of it	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz1 Final Quiz
	3 Practical	A10: Recognizes an introduction to forest conservation science	- Maintenance of Forests;	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2 : Understands the importance of wildfires	forest fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A11 : Familiar with some information on forest degradation and extinction factors	Forest degradation and extinction factors	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct application using available tools
3	2 Theoretical	C1 : Extracts methods to combat forest fires	forest fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A15 : Determines the main effects of temperature on plants in general	Basic Effects of Temperature on Plants	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	View Field
4	2 Theoretical	A3: Draws up a list of the most important machinery and equipment needed to extinguish fires	Machinery and equipment to extinguish fires	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz,
	3 Practical	E2 : Estimates the severity of forest fires	forest fires	Interactive lecture, brainstorming, dialogue and	Practical Quiz 2,

				discussion, field training, practical exercises, self-learning	Live Drawing
5	2 Theoretical	C2: Shows how to take advantage of fires for forest conservation purposes	Utilization of fires for forest conservation purposes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A12 :Learns how to diagnose plant disease	Pathognomy	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Views from live models
6	2 Theoretical	A4: Determines the damage of gases and fumes and their effects on forests	Gases, fumes and their effects on forests	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	B2: Illustrates the negative effects of acid rain	Negative effects of acid rain	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
7	2 Theoretical	E1: Confirms the harmful effect of toxic gases by examining the leaves and viewing the manifestations of the injury	Diagnosis of adverse effects of toxic fumes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	A14: Knows the bush and ways to combat it	The jungle and ways to combat it	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Figure Presentation
8	theoretical descriptive	A5 : Identify climate factors that are harmful to forests	4.2. Climatic Factors	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	C5: Explains the impact of toxic fumes and gases on forest trees	Effect of fumes and toxic gases on forest trees	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework

9	2 Theoretical	A6 : Identifies damages caused by climatic events	Damage caused by climatic events	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	B3: Document the injury and diagnosis of forests with toxic pollutants	Injury and diagnosis o forests with toxic pollutants	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
10	2 Theoretical	C3 : Concludes preventive measures and measures to reduce the impact of climatic events	Preventive measures t reduce the effects of climatic events	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2
	3 Practical	C6: Clarifies the classification of the highest ranks in insects	Classification of top ranks in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live Drawing Homework
11	2 Theoretical	C4: Shows the most important adverse effects of drought and rain	Adverse effects of drought and rain	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	A18 : characterizes pesticides	Pesticides	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
12	2 Theoretical	A7: Recognize the importance of having a biological balance within the forest	Bio-balance within the forest	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	B4: Identifies the class of winged insects in addition to a scientific visit	Winged insects in addition to a scientific visit	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
13	2 Theoretical	A8 :Determines human damage to forests	Human damage to forests	Interactive lecture, brainstorming, dialogue and	A final test

				discussion, self-learning	
	3 Practical	A17 : Explains the classification of succulent straw insects	Classification of Juice Pipettes Insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
14	2 Theoretical	A9: Schedules the most important harmful plants (jungles) in the forests	Harmful Plants	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A16: Classifies human damage to forests	Human damage to forests	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
15	2 Theoretical	B1: He calls the preventive measures to protect forests from them by mechanical, biological and chemical methods	Preventive measures to protect forests by mechanical, biological and chemical methods	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A13 : Identifies harmful plants	Harmful Plants	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."

11. Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5

3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2
11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (methodology if any	Forestry and Afforestation (1990). Abdullah , Yawaz Shafiq and Adel Ibrahim Al-Kinani . Dar Ibn Al-Athir for Printing and Publishing,224Ministry of Higher Education and Scientific Research.
Key References (Sources)	- None
Recommended supporting books and references (scientific journals, reports…)	None
E-References , Websites	https://arab-ency.com.sy/ency/details/7779/13-1 2- https://www.fao.org/3/cb9363ar/cb9363ar.pdf

Theoretical subject teacher
Dr. Samer Amir Hanna

Practical Instructor
dr. Raghad Abdul Razzaq Jamal

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis

جامعة الموصل
كلية الزراعة والغابات
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Course Description Form

1. Course Name:
Forest Soil
2. Course Code:
FOSO256
3. Semester / Year:
Second Semester / 2023-2024
4. Description Preparation Date:
1 / 2 / 2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Qahtan Darwish Essa Email: qahtan_darwish@uomosul.edu.iq

8. Course Objectives

Theory : -Enabling the student to know the composition, origin and development of soils - Introducing the student to the physical, chemical and biological properties of soil - Introducing the student to some soil problems, such as salinity and alkalinity and how to treat it	Practical : - Enable the student to learn about collecting soil samples from the field, How to prepare it for laboratory analysis and conduct the most important basic analyses for soil

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: The student Demonstrates concepts Soil science practical : b2 : The student identifies the soil profile	Theory: Introduction to science concepts the soil practical : Move the soil and collect samples from field	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks	Exams, Homework, Reports

				and reports	
2	2Theory 3 Pract	Theory: a2: The student gets to know Soil formation practical : a13: The student gets t know Description of soil section	Theory: Origin and development of soil practical : Description of soil section	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: c1: The student learns About the processes of soil formation practical: b3: The student identi a tissue the soil	Theory: Soil formation processe practical : Determine soil texture	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: c2: The student distinguishes the organic layers in soil practical : b4: The student measures the density of the soil	Theory: Organic layers in the soil practical : Estimating soil density	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: a3: The student explair the properties Soil physical practical : b5: The student measu the degree of interacti the soil	Theory: Physical properties of soil practical : Estimating the degree of soil interaction	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: a4: The student learns about construction the soil practical : b6: The student measures a ratio Carbonates in soil	Theory: Soil building practical : Estimation of calcium carbonate in the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style	Exams, Homework, Reports

				Practical : Assigning tasks and reports	
7	2Theory 3 Pract	Theory: a5: the student gets to know Soil temperature practical : b7: The student measu a ratio Carbonates and bicarbonates in the soil	Theory: soil temperature practical : determination carbonates bicarbonates in the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: b1: The student identifies a type of water the soil practical : b8: The student measu the content wet.	Theory: Soil water classification practical : Moisture content Measurements for soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: a6: The student distinguishes properti Chemical soil practical : b9: The student measures a ratio Na and K	Theory: Colloids and properties Chemical soil practical : Determination of Na and K	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: a7: The student explair organic colloids practical : b10: The student measures the material membership	Theory: Organic colloids practical : Estimation of soil organic matter	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2Theory 3 Pract	Theory: a8: The student is familiar with the properties of soil Biological practical :	Theory: Soil biological properties practical : Estimation of humic compounds	Theory : -Auditory methods, -Style of writing on The blackboard	Exams, Homework, Reports

		c3: The student discov vehicles Humic	in the soil	-Direct dialogue style Practical : Assigning tasks and reports	
12	2Theory 3 Pract	Theory: a9: The student learns about the salinity and alkalinity soil practical : a14: The student determines soil salinity	Theory: Salinity and alkalinity in the soil practical : Estimation of soil salinity	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: a10: The student is familiar with the effect of salinity on agricultural production practical : b11: The stud measures the soil capacity Cation.	Theory: The effect of soil salinity on agricultural Production practical : Estimation of soil cation capacity	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: a11: The student is familiar with the elements important food practical : c4: The student discovers the extract available elements from the soil	Theory: Important nutrients In the soil practical : Extracting available elements from the soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: a12: The student learns about phosphorus and potassium in the soil practical : b12: The student measures phosphorus in the soil	Theory: Phosphorus and Potassium in the soil practical : Determination phosphorus in soil	Theory : -Auditory methods, -Style of writing on The blackboard -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %

	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Book (Soil Science) Dr. Abduallah Al-Aani
Recommended books and references (scientific journals, reports...)	Book (Environmental chemistry of Soil) and (Soil Chemistry)
Electronic References, Websites	**Sposito, G. (2008).** The chemistry of soil. Oxf University Press

Teacher of Theory : Dr. Qahtan Darwish Essa

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Teacher of Practical : Mr. Mohammed Aiad Harbawi , Aliaa Abd-Allateef

Chairman of the Scientific Committee :

Head of the Dept. of Forestry Sciences:

Description Course of Forestry Investment

1. Course Name:
Forestry investment
2. Course code :
FOIN398
3.Semester/Year:
First Semester /Third Stage/2023-2024
4.The date this description was prepared :
1/9/2023
5. 5-Available forms of attendance
In-Person
6.Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7.Name of the course administrator (if more than one name is mentioned) :
Msc. Munther Younis Mohammed / Nazri Dr. Karam Ali Younis / Practical
8 Course Objectives
• Recognize concepts in forestry investment • Familiar with investment processes and ways to perform them • Understand factors influencing tree selection for cutting • Knows the selection of the projection direction of the tree and the projection proc technique • Determines the process of chopping down the projected trees and measuring them for purpose of chopping • Determines how to cut the tree to a larger size and how to cut it to a higher value • Identifies the technique of removing tree branches and the process of peeling the foreski • Concludes preventive measures and measures to reduce the impact of climatic events • Familiarity with the concept of the initial transfer from all sides • Determines the measurement of wooden logs and the process of classifying them • Identifies methods of drying wood
9 |||UNTRANSLATED_CONTENT_START|||التعليم استراتيجيات والتعلم|||UNTRANSLATED_CONTENT_END|||
- Interactive lecture - Practical exercises - Brainstorming - Assigning specific tasks and preparing reports on them - Dialogue and Discussion - Self-learning - |||UNTRANSLATED_CONTENT_START|||التدريب الميداني |||UNTRANSLATED_CONTENT_END|||

10 10. Course Structure					
Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical	A1: Concepts in forestry investment	The importance of investment processes, forest investment plan, investment as a development work	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A1: Concepts in forestry investment		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2: Investment operations and methods of payment	Factors influencing the choice of method of work, level or degree of investment, Voluntary Investment	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B1 : Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
3	2 Theoretical	A3: Dropping forest trees	Factors affecting the selection of trees for cutting, marking trees for the purpose of dropping , organizing teams and dropping yards	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A2: Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
4	2 Theoretical	A4: Dropping forest trees	Projection Direction Selection, Projection Process Technique	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B2 : Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
5	2 Theoretical	A5 : Cutting down fallen trees	Measuring for slicing, slicing for a larger size, slicing for a higher value	Interactive lecture, brainstorming , dialogue and	- A midterm? A final test

				discussion , self-learning	
	3 Practical	A3: Dropping forest trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
6	2 Theoretical	B1 : Cutting down fallen trees	Basal and medial defect cutting, medial defect cutting, cutting process technique	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B3 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
7	2 Theoretical	B2 : Cutting down fallen trees	Removing tree branches, the process of removing foreskin	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A4: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
8	2 Theoretical	B3 : Initial Transportation	The distance of the primary transport , the primary means of transport, the factors affecting the choice of the primary means of transport	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A5 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
9	2 Theoretical	A6: Initial transportation	How to transport trees, stacking yards	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A6: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test

10	2 Theoretical	B4 : Measurement and classification of trunks	Measurement of trunks by weight, measurement of trunk volumes, trunk classification systems	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A7: Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
11	2 Theoretical	A7: Drying and evaporation of wood	Drying Methods, Air Drying Accelerated Air Drying, Oven Drying	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A8 : Cutting down fallen trees		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
12	2 Theoretical	B5: Drying and evaporation of wood	Defects of drying, drying test	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A9: Measurement and classification of trunks		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
13	2 Theoretical	A8 : Drying and evaporation of wood	Defects associated with fungal infections, Defects associated with chemical changes in wood	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	A10 : Scientific visit		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test
14	2 Theoretical	A9: Wood corrosion and preservation	Microbiological erosion, erosion by insects	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B4 : Defects associated with wood drying		Interactive lecture, brainstorming , dialogue and	- A midterm? Laboratory test

				discussion , self-learning , laboratory training	
15	2 Theoretical	A10 : Wood corrosion and preservation	Wood Preservation Methods, Wood Preservatives	Interactive lecture, brainstorming , dialogue and discussion , self-learning	- A midterm? A final test
	3 Practical	B5: Wood corrosion and preservation		Interactive lecture, brainstorming , dialogue and discussion , self-learning , laboratory training	- A midterm? Laboratory test

11 Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5
3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2
11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12 Learning and Teaching Resources

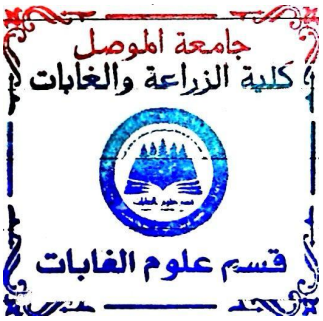
Required textbooks (methodology if any)	**Forest Investment Book – Riyadh Saleh Al-Khafaf – Walid Abboudi Kassir – Bassem Abbas Abd Ali - 1993**
Key References (Sources)	Forest Products and Utilization Prof.111 Jeetram Department of Forestry and Environmental Science,
Recommended supporting books and references (scientific journals, reports…)	
E–References , Websites	

Theoretical subject teacher
Eng. Munther Younis Mohammed

Practical Instructor
Prof. Dr. Karam Ali Younis

President of the Scientific Committee
Prof. Dr. Mohammed Younis Al-Alaf

Head of Forest Science Department
Prof. Dr. Muzahim Saeed Younis



Course Description Form

1. : Course Name
Freedom and democracy
2. : Course Code
DEHR100
3. Semester / Year : Annual
second semester/second stage/2023-2024
4. Date this description was prepared
1 /2 /2024
5. Available forms of attendance:
Attendance lesson
6. :(Number of study hours (total)/number of units (total
45 hours of theory / 2 hours of theory per week / 2 units
7. (Name of the course administrator (if more than one name is mentioned
Name: Mohammed Zuhair Abdulkareem Email:mohamedzuhair87@uomosul.edu.iq
8. Course objectives
1- Understanding, assimilating and giving students the skill to apply the ideas of democracy and human rights 2- discussion of democracy and human rights topics Expanding the skills of reading , dialogue and 3- Clarifying the most important modern ideas and global, regional and local examples on the topics of . democracy and human rights 4- troducing students to Enabling students to understand and defend civil and political rights, and in .democratic practice and its types as a basis for exercising political rights 5- Creating an understanding and aware generation by enabling it to understand rights and freedoms of all couraging political participation in election, kinds, being able to know democratic practice, and en While enhancing the culture of dialogue and discussion as a method .nomination, and other political rights among students
9. Teaching and learning strategies
- Interactive lecture - Brainstorming - discussion Dialogue and - education -Self - .Education strategy collaborative concept planning

10. Course structure					
the week	hours	Required learning outcomes	Name of the unit or subject	Learning method	Evaluation method
First	2Theoretica	C3: The student should be able to explain phenomena related to the history and development of human rights D1: The student should be able to present information related to human rights and their development D9: Enabling the student with the capabilities of self- and continuous education to develop concepts related to the development of human rights	History of public freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test , final test
Second	2Theoretica	C3: Enabling the student to understand and interpret human rights in heavenly religions D1: Enable the presentation and understanding of information related to human rights D9: Enable the student to present information from several sources on human rights to develop his own concepts	freedoms in heavenly religions	nteractive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test , final test
Third	2Theoretica	C3:Enabling the student to interpret and distinguish between types and forms of human rights D1: The student should be able to present information related to human rights issues D9: The student should be able to present information related to forms of human rights to develop his own concepts D11: The student must be able to defend his rights after knowing them	Forms of public freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, final test,
Fourth	2Theoretica	C3:Enabling the student to understand and interpret modern human rights D1: Enable the student to present information related to modern human rights D11: That the student be able to defend his new rights and take risks	New or modern freedoms	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, final test

Fifth	2Theoretica	C3:The student should be able to understand the interpretation of phenomena related to human rights in international governmental organizations D1: The student should be able to present information related to international organizations D9: To be able to develop his information related to international organizations	Freedoms in international governmental organizations organizations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, final test
Sixth	2Theoretica	C3:The student should be able to understand and explain phenomena related to how non-governmental organizations deal with human rights D1: The student should be able to present information related to human rights in non-governmental organizations D11: That the student be able to defend his new rights with the help of non-governmental organizations	Freedoms in non-governmental organizations organizations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 1, short test, reports, homework, final test
Seventh	2Theoretica	C3:The student should be able to understand and interpret what is related to human rights and freedoms in the Iraqi Constitution in 2005. D9: To be able to develop his information related to international organizations D11: Enabling the student to defend his rights by resorting to responsible authorities and using peaceful means	Freedoms in the Iraqi constitution in 2005	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester test 2, short test, final test
eighth	2Theoretica	C3:The student should be able to understand and distinguish the types of governments D1: The student should be able to present information related to the types of governments D9: To be able to develop his information related to types of governments	Types of governments	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework assignments and final test
Ninth	2Theoretica	C3The student should be able to understand, explain and distinguish democratic government D1: The student should be able to present	Democratic government	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework, final test

		information related to democratic government D9: To be able to develop his knowledge related to democratic government			
Tenth	2Theoretica	C3:The student should be able to understand and explain the characteristics of democratic government D9: Enable the student to develop his knowledge related to the characteristics of democracy	Characteristics of democracy	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester 2 test, short test homework assignments and final test
Eleventh	2Theoretica	C3:The student should be able to understand, interpret and distinguish images of democratic government D1: The student should be able to present information related to democratic government	Pictures of democratic government	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A short test, a semester test, 2 homework assignments, and a final tes
Twelveth	2Theoretica	C3:The student should be able to understand the interpretation and distinction of indirect democracy D1: The student should be able to present information related to democratic government D9: Enable the student to develop his knowledge related to indirect democracy	Indirect democracy	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, homework, final test
Thirteenth	2Theoretica	C3:The student should be able to understand the interpretation and distinguish the types of ballots D1: The student should be able to display information related to the types of ballots D9: Enable the student to develop his knowledge related to the types of voting D11: Enabling the student to defend his rights related to his participation in universal suffrage by peaceful means.	Types of ballots	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, reports, final exam
Fourteenth	2Theoretica	C3:The student must be able to understand the interpretation and knowledge of the preparatory procedures for the election D1: The student should be able to present information related to election procedures D9: Enable the student to develop his knowledge related to	procedures Preliminary elections	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test

		election procedures D11: The student must be able to publicly defend his rights to participate in the elections			
Fifteenth	2Theoretica	C3:The student should be able to understand, distinguish and explain the types of elections D1: The student should be able to present information related to the types of elections D9: Enabling the student to develop his knowledge related to the types of elections D11: The student must be able to publicly defend his rights to participate in the elections	Types of election	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test

11. Course evaluation:

The grade distribution is out of 100, as the tasks assigned to the student, such as daily preparation, oral, monthly or daily written exams, reports to...etc., are out of 40, which is the semester pursuit rate for the subject. The final theoretical exam is 60 out of 60, as follows:

Number	Calendar methods	Calendar date (week)	degree	Relative weight %
1	Report 1	fourth week	1	1
2	Report 2	The fifth week	1	1
3	Short test (1) Quiz	sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3) Quiz	The fifteenth week	2	2
6	Semester test (1)	the sixth week	8.5	8.5
7	Semester test (2)	The eleventh week	8.5	8.5
8	Short test (4) Quiz	The thirteenth week	2	2
9	Report3	The eighth week	1	1
10	Homework	6,8,9,10,11,12,13	3	3
11	Participations in lectures	All weeks	4	4
12	Short test (5) Quiz	The ninth week	2	2
13	Report (4)	The twelfth week	1	1
14	Short test	The tenth week	2	2
15	Final theoretical test	Final semester exams	60	
	the total	100	100%	100%

12. Learning and teaching resources

Required textbooks (methodology, if any)	. **a-** Relying on the prescribed curricula issued by the Ministry. Among them: The book on human rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2010 **B-** Relying on the curricula prepared by the subject teacher. There is no prescribed book for the subject, but rather there is a set of preparations prepared by the subject teacher based on practical sources related to the subject of human rights, and the lectures were given to the students

Main references (sources)	1. Human Rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2. Universal human rights between theory and practice, written by Jack Donnelly. 3. Human Rights, Children and Democracy, written by: Maher Saleh Allawi Al-Jubouri others. 4. Human Rights and Public Freedoms, written by: Ramez Muhammad Ammar. 5. The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna. 6. The Philosophy of Human Rights, written by Ansam Amer Al-Sudani. 7. The Concept of Contemporary Democracy, written by: Ali Khalifa Al Kuwari. 8. Democracy, written by Charles Tilly , translated by: Muhammad Fadel. 9. Rooted Democracy and the Problem of Implementation, written by: Muhammad Al-Ahmari 10. Parliamentary Governments, written by : John Stuart Mill, translated by: Emile Al-Ghour 11- Electoral Systems, written by: a group of authors.
Recommended supporting books and references (scientific journals, reports....)	1- The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna. 2- -Al The Philosophy of Human Rights, written by Ansam Amer Sudani. 3- Human Rights in the Western Religious Heritage and Islam , written by: Muhammad Jalaa Idris and Amal Muhammad Abd al-Rahman Rabie.
Electronic references, Internet sites	1- The United Nations website: https://www.un.org/ar/global-issues/human-rights 2- The website of the Office of the High Commissioner, United Nations H Commissioner for Human Rights: https://www.ohchr.org/ar/hr-bodies/hrc/home 3- Amnesty International website: https://www.amnesty.org/ 4- UNICEF website: https://www.unicef.org/ar/ 5- International Committee of the Red Cross website: https

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

Subject teacher
Mohammed Zuhair Abdulkareem

Course Description Form

1. Course Name:
Genetics
2. Course Code:
GENT212
3. Semester / Year:
Autumn 2nd semester/ 2023-2024
4. Description Preparation Date:
1/2/2024
5. Available Attendance Forms:
Life in person
6. Number of Credit Hours (Total) / Number of Units (Total)
2 + 3 / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr . Omar mdafar Name: Shaymaa dhayaa Email: shaymaa_dhayaa@uomosul.edu.iq
8. Course Objectives

Course Objectives - Enable the student to understand and comprehend what is related to soil morphology and its relationship to soil science and water resources - Enable the student to know the most important features of the stove - Enable the student to become familiar with the most important factors affecting the development of horizons - Empowering the student with the ability to detect diagnostic horizons - The student can explain the development of horizons and address the differences in results for the future over time	practical: - Enabling the student to become familiar with the most important laboratory methods in studying macro- and micro-morphological characteristics and the important chemical and physical analyzes in distinguishing and studying soil horizons.
9. Teaching and Learning Strategies	
Strategy - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting	practical: - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experimer

- Presentations of models of soil horiz and their detailed study	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	A1Lecture: Explains a general overview of genetics, the important basic rules, and its relationships with other sciences A9 Practical: The student knows primitive (undeveloped) cells and true cells (nucleus)	Lecture: Introduction to genetics Practical: Plant cell structure - functions - properties	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
2	2+3	A2 Lecture: Explains how gender determines interest, importance, and other effects A5 Practical: Know the gene (transmitted from parents to offspring), test the pea plant, and Mendel's gene collection.	Lecture: Determine gender Practical: The gene is transmitted from parents to offspring, testing the pea plant and Mendel's collection of genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
3	2+3	A3 Lecture: Distinguish the characteristics of genetic material, determine its nature, and the factors affecting its nature A11 Practical: Define Mendel's first law, the law of free distribution, with examples and experiments, and	Lecture: The nature of the genetic material Practical: The modern scientist Gregor Mendel founded genetics and modifications	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		inverse (backward) multiplication.			
4	2+3	A4 Lecture: lists the development of the concept of the gene, its hereditary nature, its importance and its basic function A12 Practical: Knows the gene, its basis and importance	Lecture: Development of the concept of the gene Practical: Development of the concept of the gene and lethal genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
5	2+3	A5 Lecture: lists permeability, expressivity, and permeable and impermeable cell membranes A13 Practical: Explains chromosomes, genes, and nucleic acids	Lecture: Permeability and expressiveness Practical: Genetic mutations	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
6	2+3	A6 Lecture: Understands identifying genetic mutations, their importance and how they occur - chromosomes - amino acids A14 Practical: lists their importance and the difference between them with functions and importance	Lecture: Genetic mutations Practical: الـDNA , RNA	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
7	2+3	Lecture: A7: Knows the basic substance of protoplasm, its importance, function, and the factors affecting it A15 Practical:	Lecture: The nature and characteristics of genetic material Practical: Cytoplasmic inheritance binomial theory	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		Knows the cytoplasm, which is the basic substance that makes up the protoplasm, and the factors affecting its effectiveness and the functions of the cytoplasm.			
8	2+3	A8 Lecture: Summarizes the genetics and evolution of populations C7 Practical: explains indirect mitosis and its stages and meiosis and its stages	Lecture: Population genetics-- heredity and evolution Practical: Cell division	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
9	2+3	C1 Lecture: Variation in chromosomes explains their importance and functions C8 Practical: Defines incomplete dominance, its absence, and its divisions with examples	Lecture: Variation in chromosome number Practical: Non-Mendelian characteristics and modifications in proportions	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
10	2+3	C2 Lecture: Explains the foundations of Mendelian genetics, its development, and its connections to other sciences C9 Practical: Explains Mendelian characteristics and their correspondence with imperfect masters	Lecture: Mendelian inheritance Practical: Incomplete dominance	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

11	2+3	C3 Lecture: defines the plant cell cycle, its working mechanism, and its importance - the laws of probability and how to use them in Mendelian genetic issues C10 Practical: Explains Mendelian traits and their association with co-dominance	Lecture: Probability laws and their uses in genetic issues - cell mechanics Practical: Shared sovereignty	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
12	2+3	C4 Lecture: identifies genetic traits associated with sex determination D1 Practical: shows its definition, functions, transfer of genetic information, and building proteins	Lecture: Sex-linked traits Practical: Nucleus in plant cell	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
13	2+3	C5 Lecture: Names the bacteria, the nature of the associations, and their association with multiple linked alleles D2 Practical: shows the blood group, the antigen on the surface of the blood cell, and the antibody in the serum, with examples	Lecture: New associations in bacteria with multiple alleles Practical: Method of probability and inheritance of blood groups in humans	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
14	2+3	C6 Lecture: The structure of the DNA strand explains its	Lecture: Structure of the DNA molecule Practical:	Auditory methods, writing style on the blackboard, direct	Assignments, discussions, Quiz

		structure and importance from a genetic standpoint D3 Practical: draws the permeable and impermeable cell membranes and their role in expression within the plant cell	Permeability and expressiveness	dialogue method Practical: Assigning tasks and writing a report	
15	2+3	D1 Lecture: shows relevant genetic associations that are important in determining genetic relatedness and evolution D4 Practical: draws the cell cycle, its phases, divisions, and time periods	Lecture: Inheritance link Practical: Cell cycle	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

Course Evaluation				
No	Evaluation methods	Evaluation date	Grade	Relative weight
1	Theoretical final report + practical experience reports	week 15 week 15	7 + 6	13 %
2	Quiz (1)	Week 3	4 + 2	6 %
3	Midterm Exam	Week 9	10+ 5	15 %
4	Quiz (2)	Week 12	4 + 2	6 %
5	Final practical Exam	Exam week	20	20 %
6	Final Exam	Final Exam week	40	40 %
	Total		100	100 %

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Genetics
Main references (sources)	Researches
Recommended books and references (scientific journals, reports...)	Papers
Electronic References, Websites	

Prof. Dr. Omar modafer

Assi.Lectu. Shaymaa dhayaa

Prof. Dr. Mohammed AL-Alaf

Head of Scientific Member

Pro. Dr. Mozahim Younis

Head of Department

Description course / forest insects

1. Course name:
Forest insects
2. Course code:
FOIN259
3. Semester/Year:
Second Semester/Second Stage/ 2023-2024
4. The date this description was prepared :
01/02/2024
5. Available attendance form
In-Person
6. Number of study hours (total)/number of units (total)
2 hours theoretical/ 3 hours practical (5 hours)/3.5 units
7. Name of the course administrator (if more than one name is mentioned) :
Dr. Samer Ameer Hanna / Theoretical dr. Raghad Abdul Razzaq Jamal / Practical
8. Course objectives
• The learner should be able to identify harmful and beneficial insects • Knowing the impact ofweather and climate on the spread and distribution of insects • Familiarity with the main causes that lead to insect epidemics • Identify the types of control programs that will reduce injuries below the level of economic damage • Distinguish between types of chemical insecticides and use the best ones • The learner's awareness of the taxonomic ranks of forest insect families, which saves time and effort when combating them • Determine the appropriate type of insect traps that can be used in forests and nurseries
9. TEACHING AND LEARNING STRATEGIES
- Interactive lecture - Brainstorming - Dialogue and Discussion - Field Training - Presentations of models of the body of insects - Assigning specific tasks and preparing reports on them - Self-learning - Practical Exercises

10. 10. Course Structure

Week	Hours	Learning outcomes required for the program*	Unit or Topic Name	Learning method	Valuation Method
1	2 Theoretical	A1 : Recognize the location and importance of taxonomic insects	Insect taxonomic site and its importance	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz1 Final Quiz
	3 Practical	A11: Identifies the most important classifications of insects	Taxonomic Rankings For insects	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
2	2 Theoretical	A2 : Familiar with an introduction to forest entomology	Introduction to Entom Mossy Woods	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A12: Familiar with insect collection methods	Methods of collecting	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct application using available tools
3	2 Theoretical	A3: Identifies damage caused by insect pests in the forest	Damage caused by Firstly: Insect pests: (EXHALING) In the \	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A13 : Identifies insect antennae	Methods of keeping	Interactive lecture, brainstorming, dialogue and discussion, field training, self-learning	View Field
4	2 Theoretical	A4: Identifies vital factors affecting insect distribution	bio factors	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz,
	3 Practical	B3: Examine the area of the head in insects and its parts	Header Area In insects and its pa	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Practical Quiz 2, Live Drawing

5	2 Theoretical	A5:Recognize forest insects control	Resistance to forest Forest insects Control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 1, Final Quiz
	3 Practical	A13 : Identifies insect antennae	Antenna For insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Views from live models
6	2 Theoretical	A6: Summarizes the impact of parasitism in insects	Insect parasitism	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	B2: Explains the parts of the mouth in insects	Parts of the mouth in i	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
7	2 Theoretical	A7: Determines the impact of legislative control on the spread of insects	Legislative control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	A15 : Mention the role of the chest and its accessories in insects	Wings in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Figure Presentation
8	2 Theoretical	A8: Identifies direct biological control	|||UNTRANSLATED_ART||| المكافحة الحيوية|||UNTRANSLA_END||| Direct Biological control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2, Final Quiz
	3 Practical	C4: Explains the presence of simple and compound eyes in insect species	Eyes in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
9	2 Theoretical	C1: Analyzes how pesticides are divided according to how they enter the insect's body	Division of pesticides by How it enters the insect's	Interactive lecture, brainstorming, dialogue and discussion, self-	Quarterly Quiz 2, Final Quiz

			body	learning	
	3 Practical	C5 : Shows the function of the abdomen and its accessories in insects	Abdomen & Accessor	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
10	2 Theoretical	C2 : Uses scientific names to identify attractants and repellents	Attractants and repellents	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quarterly Quiz 2
	3 Practical	C6: Clarifies the functions of the legs and their parts	Legs in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live Drawing Homework
11	2 Theoretical	C3: Explains the most important methods of integrated control	Integrated Resistance Integrated control	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	C7: Chronology of insect phases	Evolution in insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	– Homework .
12	2 Theoretical	A9: Recognize the nature of nutrition in leaf food	Nutrition Natures in Leaf Food	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	C8: Detects insect infestations with a scientific visit to the forest	Discovering insect ir forest in addition to a	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Direct drawing and homework
13	2 Theoretical	D1 : Moderates panel discussions on leaf-eating insect species	Insect species Not like knives, beca dull,	Interactive lecture, brainstorming, dialogue and discussion, self-learning	A final test
	3 Practical	A18 : Explains the ranks and ranks of insects	Under an insect que Wingless	Interactive lecture, brainstorming, dialogue and discussion, field	– Homework

				training, practical exercises, self-learning	.
14	2 Theoretical	B1: Looks for damage caused by leaf binders insects	Paper Associations	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A17: Classify winged insects	Under Row Winged Insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."
15	2 Theoretical	A10: Describes bark, bark and wood bark insects/bark beetle species	Foreskin and Bark Insects wood / types of bark beetles	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz, Final Quiz
	3 Practical	A14: Identifies insects inside wing growth	- Really? Interior of the wings	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	"Little Things." Little taste. Yeah, let's run "Little Things."

11. Course Evaluation

This service allows customers to issue a permit	evaluation methods	Calendar Appointment (Week)	Degree	Relative Weight%
1	Report I	Week 4	2.5	2.5
2	Weather Report - %1 - %2	Week 5	2.5	2.5
3	Quiz (1)	Week 6	2	2
4	Quiz 2 (Islamic Translation)	Week 4	2	2
5	Quiz (3)	Week 5	1	1
6	- A midterm?	Week 6	7.5	7.5
7	- A midterm?	Week 11	7.5	7.5
8	Final theoretical test	senior year	40	40
9	Practical Field Drawing	Week 5	5	5
10	Laboratory assessment	Week 3	2	2

11	Practical Quiz (1) Quiz	Week 1	1	1
12	Practical Quiz (2) Quiz	Week 4	0.5	0.5
13	Practical Quiz (3) Quiz	Week 4	1	1
14	Direct Drawings and Homework	Weeks 6, 8,9,10,11,12 and13	5.5	5.5
15	Final Practical Test	senior year	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (methodology if any	**Swailem , Saleh Muhammad and Ismail Najm al-Maarouf (1981) .Forest insects. Ministry of Higher Education and Scientific Research, Dar Al-Kutub Foundation for Printing and Publishing - Mosul University.**
Key References (Sources)	- None
Recommended supporting books and references (scientific journals, reports…)	None
E−References , Websites	https://www.noor-book.com/tag/ % D8% B9% D9% 84% D9 85-% D8% AD % D8% B4% D8% B1% D8% A7% D8% AA- D8% A7% D9% 84% D8% AB % D8% A7% D8% A8% D8 A7% D8%

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