Course Description Form

1. Course Name:
Organic Matter in the soil
2. Course Code:
AGSW24_F3024
3. Semester / Year:
First fall semester / 2024-2025
4. Description Preparation Date:
1\ 9 \ 2024
5. Available Attendance Forms:
My presence
6. Number of Credit Hours (Total) / Number of Units (Total)
2 theoretical + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ran Abdalhade Gazal & M.Dr. Mohamad Ayad Harbawee M.Dr. Hesham Saadaldeen Younis
8. Course Objectives

theoretical 1- Enabling the student to know the organic matter in the soil 2- Identify the phenotypic characteristics of organisms in the soil 3- Identify how organic matter is transformed into humus in soil 4- Introducing the student to the characteristics of organic matter in the soil 5- Trying to enhance the student's skills in diagnosing and calculating each other Chemical equations	Practical Enabling the student to have the ability to analyze Organic matter and enzyme determination And conduct practical experiments to detect some sugars

9. Teaching and Learning Strategies

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

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3 practical	Theoretical The student demonstrates a conc Organic matter From the soil Practical The student gets to know the material organic matter and its decomposition in soil	Theoretical Organic matter in soil, its definition and sources Practical Decomposition of organic matter in soil	theoretical audio methods, Writing on the boar Direct dialogue style practical Assigning tasks and reports	Short exams, assignments, discussions
2	2 Theoretical 3 practical	Theoretical The student explains the most important Components of plant waste Practical The student reveals the origin and method you analyze it	Theoretical Components of plant waste Practical Hydrolysis of starch	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks and reports	Short exams, assignments, discussions
3	2 Theoretical 3 practical	Theoretical Identify organic compounds Practical The student can detect Liquefy the gelatin	Theoretical Simple organic compounds resulting from the decomposition of organic matter Practical Detection of gelatin liquefaction	theoretical audio methods, Writing on the board direct dialogue s practical Assigning tasks and reports	Short exams, assignments, discussions
4	2 Theoretical 3 practical	Theoretical The student learns about the carbon cycle and enzymatic activity in the soil Practical The student detects the breakdow of fats	Theoretical Organic matter: carbon cycle, enzymatic activity in soil Practical Lipolysis	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks and reports	Short exams, assignments, discussions
5	2 Theoretical 3 practical	Theoretical Recognize transformations Nitrogen bioavailability and microorganisms that decompose Urea Practical The student will be able to decompose organic acids	Theoretical Biological transformations of nitrogen: nitrogen cycle, urea hydrolysis, nitration process Practical Hydrolysis of amino acids	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
6	2 Theoretical 3 practical	Theoretical The student explains how it is done Mineralization and nitrogen assimilation Practical The student learns how Determination of cellulase enzyme in soil	Theoretical Biological nitrogen fixation Practical Cellulose hydrolyzes aerobically and anaerobically	theoretical audio methods, Writing on the board direct dialogue s practical Assigning tasks reports	Short exams, assignments, discussions
7	2 Theoretical 3 practical	Theoretical The student is aware of the importance of nitrogen-fixing microorganisms	Theoretical Biotransformations of phosphorus: its cycle and the role of microorganisms in its transformations	theoretical audio methods, Writing on the board direct dialogue style	Short exams, assignments, discussions

		Practical The student detects the decomposition of cellulose	Practical Determination of phosphatase enzyme in soil	practical Assigning tasks reports	
8	2 Theoretical 3 practical	Theoretical The student judges the role Microorganisms that convert phosphorus Practical The student is able to estimate the enzyme phosphatase in soil	Theoretical Biotransformations of sulfur: a role Sulfur, its mineralization, representation Microbial, oxidative stress Practical Quantification of fungal growth	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
9	2 Theoretical 3 practical	Theoretical The student learns about the role Microorganisms that transform sulfur Practical The student can measure the amount of fungal growth	Theoretical Reduction of inorganic sulfur compounds Practical Sulfur transformations Biology	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
10	2 Theoretical 3 practical	Theoretical Determine which student you are doing By reducing sulfur compounds Inorganicity Practical The student will be able to estimate sulfur biologically	Theoretical Biotransformations of iron: oxidation and reduction, decomposition of iron compounds Membership Practical Estimation of urease enzyme	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
11	2 Theoretical 3 practical	Theoretical The student learns about the role Microorganisms that transform iron Practical The student will be able to estimate the urease enzyme in the soil	Theoretical Decomposition of pesticides in soil Practical Estimation of catalase enzyme	theoretical audio methods, Writing on the board direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
12	2 Theoretical 3 practical	Theoretical The student is familiar with the role of microorganisms in the decomposition of pesticides Practical The student is able to estimate th catalase enzyme in soil	Theoretical The student is familiar with the role of microorganisms in the decomposition of pesticides Practical The student is able to estimate the catalase enzyme in soil	theoretical audio methods, Writing on the board Direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
13	2 Theoretical 3 practical	Theoretical The student explains the relationship between microorganisms Practical The student reveals the total reducing sugars	Theoretical The student explains the relationship between microorganisms Practical The student reveals the total reducing sugars	theoretical audio methods, Writing on the board Direct dialogue style practical Assigning tasks reports	Short exams, assignments, discussions
14	2 Theoretical 3 practical	Theoretical The student learns about an Activity Microbiology in the area near the roots Which is known as the rhizosphere Practical The student reveals an ability	Theoretical The student learns about an activity microbiology in The area near the roots Which is known as the rhizosphere Practical	theoretical audio methods, Writing on the board Direct dialogue style practical Assigning tasks and reports	Short exams, assignments, discussions

		Bacteria to perform transformations Nitrogenism	The student reveals an ability Bacteria to perform transformations Nitrogenism		
15	2 Theoretical 3 practical	Theoretical The student learns about the most important... Factors affecting growth Microbiology Practical The student reveals the ability of bacteria to carry out phosphate transformations	Theoretical The student learns about the most important... factors affecting growth microbiology Practical The student reveals the ability of bacteria to carry phosphate transformations	theoretical audio methods, Writing on the board Direct dialogue style practical Assigning tasks and reports	Short exams, assignments, discussions

11. Course Evaluation

	Evaluation	Time of evalution	Degree	Relative weight
1	Theoretical final report + practical experience reports	Theoretical week 15. Practical week 1-15	7 Theoretical + 6 Practical	13%
2	Short test Quiz1	3 Week	4 Theoretical + 2 practical	6%
3	Midterm exam (theoretical and practical)	9 Week	10 theoretical + 5 practical	15%
4	Short test 2 Quiz	12 Week	4 Theoretical + 2 practical	6%
5	Final practical test	Practical exams week	20%	20%
6	Final theoretical test	The week of theoretical exams	40%	40%
Sum			100%	100%

12. Learning and Teaching Resources

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

M. Dr.. Rand Abdel Hadi Ghazal
Theoretical subject teacher:

M.Dr. Mohammad Ayad Harbawi
M.Dr. Hesham Saadaldeen Yunis
Practical subject teacher

Dr. Khaled Anwar Khaled
Head of the Department of Soil Sciences and Water Resources

Dr. Abdul Qader Abash
Chair of the Scientific Committee