Republic of Iraq

The Ministry Of Higher Education

& Scientific Research

بسم الله الرحمن الرحيم

University: Diyala
College: Agriculture
Department: Soil and water resources department
Stage: Second
Lecturer name: Dr. Faris M.Suhail
Qualification: : PhD.
Place of work: Coll. Of Agriculture

Flow up of implementation celli pass play

Course Instructor	**Prof.**Dr. Faris M. Suhail				
E-mail	farissuhail@.uodiyala.edu.iq				
Title	Soil Microbiology				
Course Coordinator	the second				
Course Objective	Definition of students with the Soil microbiology according to the vocabulary of the curriculum of the Soil microbiology of the students of the fourth stage of students of the soil and water resources department				
Course Description	The curriculum items included an introduction to soil microbiology, a historical overview, definition, the importance of studying soil microbiology, sections of soil biology, soil biology groups, organic matter and its decomposition, biological transformations of N, phosphorus, sulfur, and iron, microbial activity in the .rhizosphere, and microbial decomposition of pesticides				
Textbook	1- Soil Microbiology Revival, Radi Al-Rashidi, University of Basra, 1987 2- Soil Microbiology, Ghayath Muhammad Qasim and Mudar Abdel Sattar. University of Mosul 1989				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	20%	15%	5%		60%
General Notes					

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week	Date	Topics Covered	Practical Part
1		Historical overview, definition, importance of studying soil microbiology	Methods of taking soil samples for microbiological studies, studying the function of microorganisms using the buried slide method
2		Sections of soil microbiology	Estimating the numbers of bacteria, actinomycetes, and fungi at different depths of soil using the serial dilution method (dilution and plate counting)
3		Soil microbial groups: bacteria, fungi, algae, actinomycetes, archaea, mycorrhizae.	Count and isolate algae and protozoa from soil
4		Organic matter: carbon cycle, enzymatic activity in soil	Estimating the number of Azotobacter in different soils using the most probable MPN count method, isolating and purifying some species and studying their morphological properties.
5		Biotransformations of N, nitrogen cycle, urea decomposition, nitration process, mineralization and assimilation, C/N ratio	Measuring the speed of decomposition of organic compounds with different percentages of carbon and nitrogen in different soils
6			Study of nitrogen transformations (nitrification and nitrification processes) in nutrient media and soil
7		Biological nitrogen fixation	Isolating root nodule bacteria from different leguminous plants, studying their properties, then multiplying them, and conducting inoculation experiments with their leguminous plants.
8		Biological transformations of phosphorus: its cycle and the role of microorganisms in its transformations	

9		Biotransformations of sulfur: sulfur cycle, mineralization, microbial metabolism, oxidation, and reduction of inorganic sulfur compounds.	Study of biological sulfur transformations
10		Biotransformations of iron: oxidation, reduction, and decomposition of organic iron compounds	Study of biological phosphorus transformations, phosphate solubilizing biology
11		Decomposition of pesticides in soil	The role of microorganisms in the formation of soil aggregates
12		Relationships between microorganisms: the area surrounding the roots (rhizosphere) and the activity of microorganisms in this area	A study on bacteriophages in some soils
13			The effect of some pesticides on the revival of displaced soil, especially economic soil
14		Factors affecting the growth of microorganisms, growth of microorganisms	Methods of isolating nematodes from soil
15			