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: Prof.Dr. Raad Abdel-Kareem Himdan
Qualification: Ph.D.
Place of work: Coll. of Agricultre

Flow up of implementation celli pass play

Course Instructor	**Prof.**Dr. Raad Abdel-Kareem Himdan				
E-mail	raadaltamimi@uodiyala.edu.iq				
Title	Principles of Soil Science				
Course Coordinator	first				
Course Objective	Introducing students to the basics of soil science according to the vocabulary of the principles of soil science curriculum for students of the second stage at the Department of Soil and Water Resources.				
Course Description	The curriculum vocabulary included: soil science definition, Soil formation and development, processes and factors controlling soil formation and development, physical characteristics of soils, chemical and biological characteristics of soils, soil salinity and alkalinity, and identification of basic nutritional elements and their importance to plants.				
Textbook	1- Principles Soil Science. Dr. Abdullah Al-Ani. University of Baghdad.				
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		Definition Soil – soil formation and development	Soil sampling process
2		Soil formation factors and processes	Soil samples preparing for laboratory studies
3		Soil profile	Soil moisture determination
4		Physical characteristics of soil: particle size distribution	Soil particle size distribution and mechanical analysis
5		Soil structure – porosity – True and bulk density	
6		Soil erosion – soil color – soil air – soil temperature	True and bulk density determination
7		Soil water – moisture content – holding water energy – water movement in soil	Soil paste: preparation and calculating saturation percent
8		Soil colloidal and chemical characteristics of soil: soil mineralogy	Electrical conductivity measurement
9		Soil colloidal and chemical characteristics of soil: organic colloids – Cation exchange capacity – Base saturation	Soil-pH measurement
10		Soil salinity and alkalinity	Determination of cations in soil water extract
11		The osmotic effect of salinity on plant growth and reclamation of salts affected lands	Determination of anions in soil water extract
12		Soil biological and biochemical properties: (classification of soil biota)	Carbonate mineral determination
13		Carbon/Nitrogen ratio - symbiotic and non-symbiotic fixation of nitrogen in the soil	Soil organic matter determination
14		Nutrients and their relationship to plant growth	Total count of soil microbiology
15		Soil classification	

Instructor's signature
Prof. Dr. Raad Abdel-Kareem Himdan
2025 / 1 / 15

Dean's signature
Prof. Dr. Raaed Ibrahim Khalil
2025 / 1 / 15