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: Third
Lecturer name: Dr. Hassan Hadi Mustafa
Qualification: : PhD.
Place of work: Coll. Of Agriculture

Flow up of implementation celli pass play

Course Instructor	**Ass.Prof.**Dr. Hassan Hadi Mustafa				
E-mail	hassanalalawy@uodiyala.edu.iq				
Title	Soil Organic Matter				
Course Coordinator	First				
Course Objective	Studying concept of defining organic matter, distinguishing between types of soil according to their organic content, identifying transformations of organic matter. Relationship between organic and mineral complex. The nature of carbon groups and their implications for agricultural and environmental value of soil.				
Course Description	In person lectures for 15 weeks, including two monthly exams and daily exams .				
Textbook	Soil chemistry, Ahmed Abdel Hadi Al- Rawi, Ahmed Haider Al-Zubaidi and Nazima Saleh Qaddouri, 1991 Ministry of Higher Education and Scientific Research. Tasdel and Nelson, Soil fertility and fertilizers, translated by Nizar Yahya Nazhat, 1991, Ministry of Higher Education and Scientific Research.				
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		Defining organic matter and determining origin and nature in the soil	Examining and distinguishing orga layers in a cross-section of cultivated a uncultivated soils and collecting s samples
2		Distinguishing between types of soils accord to their organic content and its relationship climatic and environmental conditions	Prepare samples by sifting and grind then estimate soil moisture and calcul dry weight at 105 c
3		Concept of soil environment, biological activ and food web in it	Estimating percentage of organic mat lecture with in soil by dry oxidation 450 c
4		Processes of transformation of organic matter soil such as decomposition and mineralization	Measurement of organic carbon in s using wet oxidation and Walkly bl method
5		Classification of organic matter in soil accord to speed of its decomposition, the degree of dissolution and ratio of carbon to nitrogen	Extracting organic matter that is easy decompose with cold and hot water
6		Factors affecting the formation of human in so	Physical fractionation of organic mat in soil according to bulk density w sodium iodide solution
7		Soil environment, nature of main components organic matter and microbial mass	Physical fractionation of organic mat in soil according to its size by separat it using acoustic vibrations
8		Types of humus according to type of vegetat cover the degree of its solubility with alkal solvents and its saturation with basic compour	chemical fractionation of organic mat in soil soil with alkaline and aci solvents

9		Physical and chemical properties of humic a and humene	Qualitative analysis of humic substan through identification of act aggregates by spectrophotometry
10		Organometallic complex and relations between active groups	Extracting fatty substances from soil w chloroform using a soxhlet device
11		Ratio of fulvic acid to humic acid in s composition	Testing degree of solubility in water extracted fatty organic matter
12		Nature of carbon categories and th implications for agricultural value of soil	Extraction of proteins and amino acids soil using chromatography
13		How to preserve organic stock in soil a manage it sustainably	Choose speed of water permeation s erosion with levels of organic content
14		Necessity of fertilizing with animal waste a compost to preserve agricultural soil	Applications in how to calcul percentage of organic matter in soil
15		Sustainable agriculture and its relationship w environment and organic matter	Estimation of humic acid/humene rati