

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	Assis. Prof. Dr. Alaa Hasan Fahmi				
E-mail	alaahfahmi@uodiyala.edu.iq				
Title	Soil, water and plant analysis <b>SPWA212</b>				
Course Coordinator	Second semester				
Course Objective	1 -The student knows how to take soil, water and plant samples 2 -The student is introduced to basic analysis methods 3 -Review some basic concepts in the field of quantitative analysis 4 -Introducing the student to methods of instrumental analysis of elements 5 -The use of X-rays for mineral and quantitative analysis				
Course Description	In this course, the student will be familiar with the different analysis methods, as well as the sampling methods for soils, water and plants samples, and will be able to distinguish among the different analysis methods				
Textbook	<b>1- G.D. Christian, 1980. Analytical chemistry. John Wiley &amp; Sons. Inc.</b> <b>2- N.T. Faithfull, 2002. Methods in Agricultural chemical analysis. A practical HandBook. CABI publishing.</b> <b>3- Soil Survey Laboratory method manual, 2004. Soil survey Investigation report. No. 42, version 4.0, USDA.</b>				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	20%	15%	5%		60%

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week	Date	Topics Covered	Practical Part
1		Introduction to soil, water and plant analysis	sampling soil samples and preparing them for analysis
2		Sampling of samples	sampling Plant and water samples
3		Review some basic concepts in the field quantitative analysis	Calculation and preparation of standard solutions
4		Process the results and verify the accuracy of analyzes	Preparation of extracts and measurement of pH and EC
5		Gravimetric analysis methods Semester First exam	Determination of Exchange cation capacity of CEC
6			Estimation of organic carbon
7		Volumetric analysis methods	Determination of available nitrogen and available potassium
8		Electrolysis methods	Determination of available phosphorus
9		Spectrometry- analysis methods	Estimation of the total soil content elements
10		Analysis methods based on atomic absorption spectrometry	Metal analysis by X-ray

<b>11</b>		Analysis methods based on atomic emission spectrometry	Determination of redox potential of soil
<b>12</b>		The use of X-rays in the field of metallurgical and quantitative analysis	Digestion of plant samples & determination of their content of elements
<b>13</b>		The use of radioactive and stable isotopes in the field of quantitative analysis of elements	Digestion of plant samples & determination of their content of elements
<b>14</b>		Semester second exam	Semester second exam
<b>15</b>			