

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: Fourth

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	Plant Nutrition				
Course Coordinator	Second				
Course Objective	Introduction the nutrients that plants absorb, their forms of absorption and presence in the soil, and how to diagnose their deficiency				
Course Description	Division of nutrients, factors affecting their absorption, and methods of absorption by plants				
Textbook	1-Youssef Muhammad Abu Dhahi, Muayyad Ahmad Al- Younis, 1988, Guide to plant nutrition. Mousl University press. 2- Youssef Muhammad Abu Dhahi, 1989. Practical plant nutrition Handbook, Mousl University press. 3- Mengel and Kerkby, 1984. Principles of plant nutrition, translated dy Dr. Saadallah Najm Al- Nuaimi.				
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		Nutrient element Their definition Classification and Mineral composition	Preparation of solutions
2		Plant relationship with growth media	Sand or sand farm
3		Factors affecting the readiness of nutrients	Plant sampling methods
4		Soilless agricultures	Nitrogen and its physiological function
5		Effort, mass flow, osmosis, imbibition and transpiration	phosphorus and its physiological function
6		Diffusion of water and nutrients	potassium and its physiological function
7		The relationship of mineral nutrition and plant growth	Calcium and magnesium and physiological function
8		Absorption theories	sulfur and its physiological function
9		Nitrogen	Ferric and manganese and its physiological function
10		Phosphorus	zinc and copper and its physiological
11		Potassium	Molybdenum and boron and physiological function
12		Calcium and Magnesium	Chloride and nickel and its physiological function
13		Sulfur	Causes of Nutrient deficiency
14		Micro nutrients	Signs of deficiency and toxicity of nutrient
15		Foliar nutrient	Reasons for the Difficulty of diagnosing nutrients

