

Republic of Iraq

The Ministry of Higher
Education

& Scientific Research

بسم الله الرحمن الرحيم



University: Diyala
College: agriculture
Department: Horticulture and Land
Scape Gardening
Stage: 2
Lecturer name: Ass. Prof. Khalid
Ibrahim Mustaf
Qualification:
University of Diyala Place of work:

Flow up of implementation celli pass play

Course Instructor	Assoc. Prof. Khaled Ibrahim Mustafa				
E-mail	khalidibrahim@uodiyala.edu.iq				
Title	Anatomy of a plant				
Course Coordinator	The first				
Course Objective	Introduce students to the types of plant cells and their components, the function of each component, plant tissues and their functions, and the internal structure of plant organs				
Course Description	Introduction, definition of plant anatomy, plant cell, types, study of the cell of high plants, cell wall, middle lamina, primary wall, secondary wall, click, plant tissue, permanent tissue, simple tissue, burnchemic tissue, collenchyma tissue, sklarenchyma tissue, cork tissue				
Textbook					
Course Assessments	Theoretical semester tests %	Practical semester tests %	Quizzes %	Final practical test %	Final Exam %
	(25%)	(10%)	(5%)	20%	(40%)
General Notes	Final grade 100%				

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the week	the date	Topics Covered	Practical Part	Notes
1		Microscope: getting to know its parts, how to deal with it, how to prepare glass slides	Introduction, definition of plant anatomy, plant cell, types, study of the cell of high plants, cell wall, middle plate, primary wall, secondary wall, click,.	
2		Making sections for the plant cell. And identify the cell wall, nucleus, protoplasm... Identify cell components in ready-made slides	Plant cell living contents, cytoplasm, mitochondria, ribosomes, Collgi system, plastids, spherical bodies, microtubules, cell membranes.	
3		Making sections of the plant cell to identify plastids (green, colored, colorless). and anthospanin dye in cellular juice	The non-living contents of the plant cell . Vacuoles, cellular juice, crystals and their types, starchy granules, alleron granules.	
4		Making clips to identify crystals (needle, star, pending...)	Plant tissues, permanent tissues, simple tissues, Brinkheemic tissue, collenchyma tissue, sklarenchyma tissue, cork tissue	
5		Making clips to identify the tissues of parenchymes, collenchymes, sklarenchymes.	Plant tissues, permanent tissues, simple tissues, Brinkheemic tissue, collenchyma tissue, sklarenchyma tissue, cork tissue	
6		Making clips to identify the meristem tissues at the growing top of the stem. And identify other types of meristem tissues through ready-made slides.	Plant tissues, complex tissues, epidermis, surrounding epidermis, vector tissues (phloem and xylem tissue).	
7		Making sections in the epidermis to identify guard cells in dicotyledons and monocotyledons, capillaries of all kinds	Plant tissues, mercetic, peripheral, interstitial, lateral tissues, primary and secondary mercetology	
8		Identification of the xylem, the cell wall of the vessels and its types, bronchioles, fibers, wood barnechema (ready chip or flex)	Prederm, bark, commercial cork, lenticels, wound cork, leaf separation	
9		Identify phloem tissue, sieve tubes, companion cells, phloem fibers, phloem burning.	The growing apex in the stem, the	

			apical cell theory, the theory of embryogenesis, the theory of the first meristem, the theory of the cover and the body, the theory of the growth of regions, the growing apex at the root	
10		Identify the internal structure of the leaf, upper epidermis, mesophyll, lower epidermis, carrier vessels (veins) of a dicotyledonous plant (ready slide Offelux) Identify the leaf structure of a monocotyledonous plant, gymnospermous plant (ready slide or flex)	Internal structure of the leaf, epidermis, cortex, vascular cylinder	
11		Identify the internal structure of the leaf (ready slide or flex)	For the internal structure of the root, epidermis, cortex, vascular cylinder, vascular tissue, root zones, lateral roots are formed.	
12		Identify secondary growth in the stem, annual rings, secondary wood, secondary bark	Secondary thickening, of the stems, of the roots. Recognize the secondary growth of the stem, annual rings, secondary wood, secondary bark. Secondary thickening of vascular cambium, cork cambium,	
13		Recognize the internal structure of the root, the area of secondary root formation, identify the root regions	The internal structure of the leaf is dicotyledonous, monocotyledonous (leaf grass), identification of the internal structure of the leaf, upper epidermis, mesophyll, lower epidermis, carrier vessels (veins)	
14		Periderm, cork fabric, cork cambium, lenticels (ready chip or flex).	Anatomy of aquatic and desert plants	
15		Periderm, cork fabric, cork cambium, lenticels (ready chip or flex).	General review of all topics	

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

Teacher's signature
Assoc. Prof. Khaled Ibrahim Mustafa
15/1/2025