مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

Course Syllabus

1	**Course title**	Plant Anatomy and Development
2	**Course number**	0304351
3	**Credit hours**	3
	Contact hours (theory, practical)	2 lectures and 3 hours practical each week
4	**Prerequisites/corequisites**	General Biology (B.251)
5	**Program title**	BSc of Biological Sciences
6	**Program code**	04
7	**Awarding institution**	University of Jordan
8	**School**	Science
9	**Department**	Biological Sciences
10	**Course level**	2nd Year
11	**Year of study and semester(s)**	Second Semester 2022/2023
12	**Other department(s) involved in teaching the course**	None
13	**Main teaching language**	English
14	**Delivery method**	**X** Face to face learning ☐Blended ☐Fully online
15	**Online platforms(s)**	**X** Moodle ☐Microsoft Teams ☐Skype ☐Zoom ☐Others…
16	**Issuing/Revision Date**	18-4-2023

17 Course Coordinator:

Sawsan Oran , PhD
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18 Other instructors:

None

19 Course Description:

The course is basic biology course for students at the B.Sc. level. The objectives of this course are to link structure with function. Therefore, it concentrates on the organization of tissues from the embryo, then studying each type of fundamental tissue types, functions, and characterization, their locations. Then studying dermal tissue especially epidermis organization cell types, functions, developmental type various trichome types. Then a special concentration on the vascular tissue of xylem, phloem, and cambium, especially cell types and their functions, developmental aspects and uses in identification of wood. The Periderm characteristics, various types, cell types, functions and different Periderm aspects including lenticels, leaf abscission, wound healing and so on. Then study of roots, stems and leaves, different types, tissues, primary, secondary, and anomalous growth types. The nodal anatomy and apical meristem organization of both shoot and root tips.

20 Course aims and outcomes:

A- Aims:

This course will enable students to get knowledge about plant structure, cells, types of plant tissues, anatomy of different plant organs from embryonic stage until mature plant, as well as the developmental phases of plant tissues and organs.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course students will be able:

1. Learn basic anatomical plant tissues.
2. Learn detailed anatomical structure of plant organs (root, stem, and leaf).
3. developmental stages and the origin or the initiation of plant cells and tissues of different plant organs.
4. The student will have knowledge about special types of cells and tissues like the trichomes and glands as well as anomalous growth.
5. Practice to get a slice from concerned tissue, identify the tissue parts under the microscope.

SLOs / SLOs of the course	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)
1	x				x	
2	x	x	x			x
3	x	x				
4				x		
5				x		

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction						
	1.2	internal organization of plant body; summary of cell types and tissues; development of seed plants.						
2	2.1	The cell (protoplasmic and non-protoplasmic components).						
	2.2	The cell (protoplasmic and non-protoplasmic components).						
3	3.1	Cell wall (components, layers, intercellular spaces, pits and their types, original growth of cell wall.						
4	4.1	Parenchyma and collenchyma						
5	5.1	Sclerenchyma (sclereids and fibers).						
6	6.1	Epidermis (composition, developmental aspects, cell wall stomata, trichomes						

7	7.1	Xylem (primary and secondary xylem), axial and radial systems growth layers, sap and heart wood.						
8	8.1	Xylem (coniferous, monocot and dicot wood). Storied and non-storied, annual rings, tylosis, development of secondary wood.						
9	9.1	Vascular cambium organization, developmental changes, pattern of cambial activity.						
10	10.1	Phloem (cell types, primary and secondary phloem).						
11	11.1	Periderm (structure and related tissues, development, outer						
12	12.1	Secretory structures (external and internal structures						
13	13.1	The root (types and variation adventitious roots, primary and secondary growth, physiological logical aspects of secondary growth).						
14	14.1	The stem (primary growth and development						

		including initial layers and meristems).						
15	15.1	The stem (types, growth and secondary structure						
16	16.1	The leaf (basic types and development, abscission, structure in relation to environment, monocots, dicots and gymnosperm leaves).						

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Midterm exam theory and practical	45	1-8	1- 5	1-4	
Final exam theory and practical	40	1-16			
Attendance and presentations and term papers.	15				

23 Course Requirements

White board mainly and in some cases the data show, internet access.

Botany labs for practical sessions.

Tours at the University to show the available plant groups, also visits to the **Herbarium** and the **green** house to look at the native plants and others.

24 Course Policies:

A- Attendance policies: Regular class attendance is expected, attendance by seating number.

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B- Absences from exams and handing in assignments on time: Reporting a valid reason of absence is accepted.

25 References:

Textbook Esau, Katherine, Anatomy of seed Plants, Wuiley

26 Additional information:

Name of Course Coordinator: Dr. Sawsan Oran ----Signature: --------- Date: 28.2.2023----------
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ---------- Signature: ----------
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature: ----------