

## Course E-Syllabus

1	<b>Course title</b>	Plant Anatomy and Development
2	<b>Course number</b>	0304351
3	<b>Credit hours</b>	3
	<b>Contact hours (theory, practical)</b>	2 lectures and 3 hours practical
4	<b>Prerequisites/corequisites</b>	General biology (B.251)
5	<b>Program title</b>	Biological sciences
6	<b>Program code</b>	
7	<b>Awarding institution</b>	Faculty of science, univ. of Jordan
8	<b>School</b>	Science
9	<b>Department</b>	Biological sciences
10	<b>Level of course</b>	4 <sup>th</sup> year
11	<b>Year of study and semester (s)</b>	2020-2021, first semester
12	<b>Final Qualification</b>	Bsc
13	<b>Other department (s) involved in teaching the course</b>	
14	<b>Language of Instruction</b>	English
15	<b>Teaching methodology</b>	<input type="checkbox"/> Blended <input type="checkbox"/> Online ZOOM & E_LEARNING
16	<b>Electronic platform(s)</b>	<input type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others...e-learning.....
17	<b>Date of production/revision</b>	3. Oct. 2020

### 18 Course Coordinator:

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### 19 Other instructors:

Name:  
Office number:  
Phone number:  
Email:

Name:  
Office number:  
Phone number:  
Email:

## **20 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 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.

As stated in the approved study plan.

## **21 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 to get knowledge about different plant tissues, developmental stages and the origin or the initiation of plant cells and tissues of different plant organs. The student will have knowledge about special types of cells and tissues like the trichomes and glands as well as anomalous growth.

### 20. Topic Outline and Schedule:

- 1 -Introduction: internal organization of plant body; summary of cell types and tissues; development of seed plants.
2. The cell (protoplasmic and non-protoplasmic components).
- 3.Cell wall (components, layers, intercellular spaces, pits and their types, original growth of cell wall.
4. Parenchyma and collenchyma
5. Sclerenchyma (sclereids and fibers).
6. Epidermis (composition, developmental aspects, cell wall stomata, trichomes
7. Xylem ( primary and secondary xylem), axial and radial systems growth layers, sap and heart wood.
8. Xylem (coniferous, monocot and dicot wood). Storied and non-storied, annual rings, tylosis, development of secondary wood.

#### Midterm exam

9. Vascular cambium organization, developmental changes, pattern of cambial activity.
10. Phloem ( cell types, primary and secondary phloem).
11. Periderm (structure and related tissues, development, outer
12. Secretory structures (external and internal structures
13. The root (types and variation adventitious roots, primary and secondary growth, physiological logical aspects of secondary growth).
14. The stem (primary growth and development including initial layers and meristems).
15. The stem (types, growth and secondary structure
16. The leaf (basic types and development, abscission, structure in relation to environment, monocots, dicots and gymnosperm leaves).

#### Marks

Midterm exam theory 30  
Midterm practical Exam 10  
Activities (Presentations, term paper..) 10  
Subtotal 50

Final Written Exam 15  
Final Practical Exam 35  
Sub Total 50



	12.3				
13	13.1	The root	«.....»		
	13.2				
	13.3				
14	14.1	The stem	«.....»		
	14.2				
	14.3				
15+-16	15.1	The stem types	«.....»		
	15.2				
	15.3	The leaf			

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting (**ZOOM**)
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

**23 Evaluation Methods:**

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

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform

**24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):**

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**25 Course Policies:**

A- Attendance policy( <b>zoom</b> )
B- Absences from exams and submitting assignments on time:
C- Health and safety procedures:
D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

F- Available university services that support achievement in the course:

**26 References:**

A- Required book(s), assigned reading and audio-visuals: the text book and zoom meetings

B- Recommended books, materials and media:

**27 Additional information:**

Name of Course Coordinator: -----Signature: ----Sawsan Oran-----  
Date:28.10.2020 -----

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----