Course E-Syllabus

1	**Course title**	`Plant anatomy
2	**Course number**	5501344
3	**Credit hours**	3
	Contact hours (theory, practical)	Theory
4	**Prerequisites/corequisites**	5501241or Concurrently
5	**Program title**	Biology
6	**Program code**	
7	**Awarding institution**	The University of Jordan
8	**School**	School of Basic and Marine Sciences
9	**Department**	Marine biology
10	**Level of course**	3/4
11	**Year of study and semester (s)**	2nd semester, 2019/2020
12	**Final Qualification**	Bachelor
13	**Other department (s) involved in teaching the course**	-
14	**Language of Instruction**	English
15	**Teaching methodology**	☒Blended ☒Online
16	**Electronic platform(s)**	☒Moodle ☐Microsoft Teams ☐Skype ☒Zoom ☒Others: Google forms, Facebook, Facebook messenger & WhatsApp groups, email, YouTube educational videos
17	**Date of production/revision**	June, 2020

18 Course Coordinator:

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19 Other instructors:
Not applicable

Name:
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٢٠ Course Description:

A study of the functional aspects of the internal structure for all plants vegetative and reproductive organs and development of vascular plants, identifies aspeds of internal anatomical structures to all vegetative and reproductive plant organs, and to compare anatomy of the plant tissue of vascular plants.

٢١ Course aims and outcomes:

A- Aims:
The course will cover the various plant tissues, their development, cellular compositions, and their role in adaptation to different environments.

B- Intended Learning Outcomes (ILOs):
Upon successful completion of this course, students will be able to:

Recognize the complexity of different tissue organization that exists within the plant bodies that allow plants to develop and live as integrated organisms in diverse environments.

٢٢. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References *Please refer to section number (26): References*
1	1.1	Introduction to the class & the history of plant anatomy	In the classroom at the university: Using classical teaching methods such as data show slides and direct contact with		A1
	1.2			Corrective feedback	A1
2	2.1	Basic plant cell histology		Corrective feedback	A1
	2.2				A1

		basic plant cell types	students.		A1
3	3.1	Anatomy of roots			A1
	3.2	Generalized root anatomy and development		Corrective feedback	A1
4	4.1	Anatomy of stems	Zoom, email	Report	A1 and A2
	4.2	Illustrations of the cross, radial, and tangential sections of stem	Zoom, YouTube educational videos	Corrective feedback	A1 and A2
5	5.1	Anatomy of leaves	Zoom and Google forms	Quiz	A1 and A2
	5.2	Environmental adaptations	Zoom and YouTube educational videos	Corrective feedback	A1 and A2
6	6.1	Morphological and anatomical interpretation	Zoom and YouTube educational videos	Corrective feedback	A1 and A2
	6.2	Meristems, growth, & differentiation	Zoom	Homework	A1 and A2
7	7.1	Dermal tissue system	Zoom	Corrective feedback	A1 and A2
	7.2	meristematic and permanent tissues	Zoom, Facebook messenger and email	Quiz	A1 and A2
8	8.1	Ground tissue system	Zoom	Corrective feedback	A1 and A2
	8.2	Vascular tissues	Zoom and YouTube educational videos	Corrective feedback	A1 and A2
9	9.1	Organ Modification	Zoom and email	Report	A1 and A2
	9.2	Environment to which plants can adapt (anatomy level)	Zoom and YouTube educational videos	Corrective feedback	A1
10	10.1	Vascular cambium	Zoom	Corrective feedback	A1
	10.2	Annual rings	Zoom, Facebook and email	Homework	A1 and A2
11	11.1	Secondary growth	Zoom	Corrective feedback	A1
	11.2	Parenchyma, tracheids and bordered pits	Zoom	Corrective feedback	A1
12	12.1	Student Project Presentations	Zoom	Corrective feedback	instructor evaluation
	12.2	Glossary of leaf morphology, I	Zoom	Homework	A1 and A2
13	13.1	Glossary of leaf morphology, II	Zoom	Corrective feedback	A1 and A2
	13.2	Student Project Presentations	Zoom	Corrective feedback	instructor evaluation
14	14.1	Flower anatomy	Zoom, Google forms and email	Quiz	A1 and A2

	14.2	Seed anatomy	Zoom and YouTube educational videos	Corrective feedback	A1 and A2

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz…etc

٢٣ 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
Quizzes	10	Anatomy of stems, leaves and roots, Annual rings, Morphological and anatomical interpretation	5, 7 and 14	Google forms
Homework	15	Meristems, growth, & differentiation, Annual rings and leaf morphology	6, 10 and 12	email, Facebook
Reports & Project presentations	25	Specific subject for each student	4, 9, 12 and 13	Email, Facebook & Zoom
Corrective feedback	0	All	All	Direct contact

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

- Computer, data show, teaching room and board (teaching at the University)
- Students should have a computer or smartphone, capable to interact with social media and online teaching platforms.

٢٥ Course Policies:

A- Attendance policies: Not applicable this semester

B- Absences from exams and submitting assignments on time: as stated by the department

C- Health and safety procedures: fulfil with the university regulations

D- Honesty policy regarding cheating, plagiarism, misbehavior: fulfil with the university regulations

E- Grading policy: as approved by the department

F- Available university services that support achievement in the course:
University library, University E-services available on the website

٢٦ References:

A- Required book(s), assigned reading and audio-visuals:

1. Chaffey N. (2008). Plant anatomy: an applied approach. Annals of Botany, 102(3), 481–482. https://doi.org/10.1093/aob/mcn118 (downloadable from the internet).

2. Roberts A. (2002) Color Atlas of Plant Anatomy, University of Rhode Island, United States (downloadable from the internet)

B- Recommended books, materials and media:

Plant Tissue Systems: Dermal, Ground, and Vascular, (http://www.plantphys.net/article.php?ch=1&id=19)

Glover, BJ (2000) Differentiation in plant epidermal cells. J. Exp. Bot. 51(344):497-50

Observing Roots below Ground (http://www.plantphys.net/article.php?ch=t&id=44)

٢٧ Additional information:

- *On average students need to spend 2 hours of study and preparations for each 60-minutes lecture.*
- *The course syllabus was modified from the original version to reflect the needs of the long-distance learning for this semester.*

Name of Course Coordinator: **Dr. Mohammad Wahsha** Signature:  Date: **6/6/2020**

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

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

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

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