Jordan University of Science and Technology

Faculty of Agriculture

Plant Production Department

PP713 Seed Physiology - JNQF Level: 9

Second Semester 2023-2024

Course Catalog
3 Credit Hours. The course describes seed structure, seed composition, seed reserve synthesis and breakdown, seed germination process; seed dormancy and ecology of dormancy, seed deterioration, and seed longevity in storage.
Teaching Method: On Campus

Text Book	
Title	Seeds Physiology of Development, Germination and Dormancy
Author(s)	J. Derek Bewley, Kent J. Bradford, Henk W.M. Hilhorst, Hiro Nonogaki
Edition	3rd Edition
Short Name	Ref #1
Other Information	Springer

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Slide Presentation and Handouts	Dr. Nezar Samarah	4th Edition	

Instructor	
Name	**Prof. Nezar Samarah**
Office Location	C4L2
Office Hours	Sun : 09:00 - 10:30 Sun : 11:30 - 12:00 Mon : 10:00 - 12:00 Tue : 09:00 - 10:30 Wed : 09:00 - 12:00
Email	nsamarah@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 12:00 - 13:00 Room: U

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Seed structure and composition	From **Ref #1**, From **Ref#2**
Weeks 2, 3	Seed development and maturation	From **Ref #1**, From **Ref#2**
Weeks 4, 5	Synthesis of storage reserves	From **Ref #1**, From **Ref#2**
Weeks 6, 7	Seed germination	From **Ref #1**, From **Ref#2**
Weeks 8, 9	Mobilization of stored reserves	From **Ref #1**, From **Ref#2**
Weeks 10, 11	Dormancy and the control of germination	From **Ref #1**, From **Ref#2**
Weeks 12, 13	Environmental regulation of dormancy and germination	From **Ref #1**, From **Ref#2**
Weeks 14, 15	Longevity, storage, and deterioration	From **Ref #1**, From **Ref#2**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
To gain knowledge of physiology seed structure, composition, and seed development and maturation. [1PLO1, 1PLO2] [1L9K1, 1L9K2, 1L9K3]	10%	
To study the synthesis and breakdown of food reserves in seeds. [1PLO1, 1PLO2] [1L9K1, 1L9K2, 1L9K3]	20%	
To understand the process of seed germination and how the environmental factors affect it. [1PLO1, 1PLO2] [1L9K1, 1L9K2, 1L9K3]	20%	
To examine different types of seed dormancy and the ecology of dormancy. [1PLO1, 1PLO2] [1L9K1, 1L9K2, 1L9K3]	20%	
To know seed deterioration and the mechanisms of loss of seed longevity in storage. [1PLO1, 1PLO2, 1PLO4] [1L9K1, 1L9K2, 1L9K3]	10%	
To develop skills related to seed quality testing such as seed standard germination and seed vigor tests. [1PLO3] [1L9S1, 1L9S2, 1L9S3]	10%	

To develop a capacity for critical evaluation and interpretation of published research information related to seed physiology. [1PLO7] [1L9C1, 1L9C2, 1L9C3]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7
38.33	38.33	10	3.33			10

Relationship to NQF Outcomes (Out of 100%)								
L9K1	L9K2	L9K3	L9S1	L9S2	L9C1	L9C2	L9C3	L9S3
26.67	26.67	26.67	3.33	3.33	3.33	3.33	3.33	3.33

Policy	
Exams	All exams are closed books and notes. The final exam is comprehensive (covers all the material). Incomplete exams need approval from the department chair
Cheating	Prohibited; and in case of cheating the student will be subject to punishment according to the university regulations
Attendance	Up to 20% following university policy
Participation	Participation is highly encouraged
Withdraw	According to the timeline defined by the university regulations

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