



Jordan University of Science and Technology
Faculty of Agriculture
Plant Production Department

PP411 Plant Breeding And Crop Improvement

Second Semester 2022-2023

Course Catalog

3 Credit Hours. The course Description include: Principles of plant breeding, applications of genetic principles by means of plant breeding procedures, Methods of selection for self and cross-pollinated and asexually propagated crops, Field techniques for breeding crops and source of germplasm and Problems facing plant breeders and ways to overcome them.

Text Book

| | |
|--------------------------|---|
| Title | Breeding Field Crops |
| Author(s) | David Allen Sleper and John Milton Poehlman |
| Edition | 5th Edition |
| Short Name | 1 |
| Other Information | |

Instructor

| | |
|------------------------|--|
| Name | Prof. Mohammed Alajlouni |
| Office Location | M1L2 |
| Office Hours | Sun : 11:30 - 14:00 Mon : 10:00 - 13:00 Tue : 11:30 - 12:30 Wed : 10:00 - 12:00 |
| Email | majl@just.edu.jo |

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue : 08:30 - 09:30

Room: C5023

Prerequisites

| Line Number | Course Name | Prerequisite Type |
|-------------|-------------------------------------|----------------------|
| 622130 | PP213 Introduction To Biostatistics | Prerequisite / Study |
| 963413 | BT341 Molecular Genetics | Prerequisite / Study |

Tentative List of Topics Covered

| Weeks | Topic | References |
|---------------------|--|------------|
| Week 1 | What is plant breeding? & Plant breeder's role | |
| Weeks 1, 2, 3, 4, 5 | The genetic bases of plant breeding. | |
| Weeks 6, 7, 8 | Tools of the plant breeder | |
| Weeks 9, 10, 11, 12 | Methods of plant breeding. | |
| Weeks 13, 14 | Germplasm resources for breeding crop plants. | |
| Weeks 15, 16 | Breeding objectives and techniques | |

| Mapping of Course Outcomes to Program Outcomes | Course Outcome Weight (Out of 100%) | Assessment method |
|--|-------------------------------------|---|
| Fostering student understanding of genetic principles underlining plant improvement. [1PLO1, 1PLO2] | 10% | First Exam, Class activities |
| Describe sources and types of genetic variation and explain their importance for plant improvement [1PLO2] | 10% | First Exam |
| Describe and understand methods that are used in plant breeding including self, cross-pollinated and sexually propagated methods. [1PLO1, 1PLO2, 1PLO6, 1PLO7] | 30% | First Exam, Second Exam, Class activities, Final Exam |
| Locate, analyze, evaluate and synthesis information relevant to plant breeding. [1PLO6, 1PLO7] | 15% | Second Exam, Class activities, Final Exam |
| Promote critical thinking in relation to improvement strategies and methods. [1PLO1, 1PLO6, 1PLO7] | 20% | Second Exam, Class activities, Final Exam |
| Discuss examples of problems facing plant breeders and approaches to overcome them and develop plans for the application of plant breeding methods to achieve a specific objective [1PLO6] | 15% | Class activities, Final Exam |

| Relationship to Program Student Outcomes (Out of 100%) | | | | | | |
|--|------|------|------|------|-------|-------|
| PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 |
| 19.17 | 22.5 | | | | 36.67 | 21.67 |

| Evaluation | |
|------------------|--------|
| Assessment Tool | Weight |
| First Exam | 25% |
| Second Exam | 25% |
| Class activities | 10% |
| Final Exam | 40% |

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