DEPARTMENT OF PLANT PATHOLOGY
FACULTY OF AGRICULTURE
University of the Punjab, Lahore

Course Outline

Programme	BSc. (Hons.) Agriculture (Plant Pathology) 4 Year program	**Course Code**	**PP-304**	**Credit Hours**	3 (2+1)
Course Title	**DISEASES OF FIELD CROPS**				

Course Introduction

To acquaint students with basic concepts and identification of plant pathogens, the focus is on understanding the fundamental concepts and identification of various plant pathogens. Students learn about different types of pathogens such as fungi, bacteria, viruses, and nematodes, exploring their characteristics, to identify and manage plant pathogens

Learning Outcomes

By the completion of this course students will be able to:

1. Understand the disease-causing factors and their impact on plant health
2. Manage the diseases and pathogens of winter field crops
3. Know the diseases and pathogens of summer field crops
4. Implement plant disease management strategies and their role in SPS

	Course Content	Assignments/Readings
Week 1	**Theory** Brown spot of rice 1.1.1 Distribution, 1.1.2 symptoms, 1.1.3 the pathogen 1.1.4 management	Mehrotra & Aggarwal 2003 Pages 516-519
	1.2 Rice blast 1.2.1 Distribution, 1.2.2 symptoms, 1.2.3 the pathogen 1.2.4 management	Pandey B.P. 2003 Pages 159-166
Week 2	2 Foot Rot of rice 2.1Distribution, 2.1.1 symptoms, 2.1.2 the pathogen 2.1.3 management	Pandey B.P. 2003 Pages 159-166
	3 Rice Bunt 3.1 Distribution, symptoms, the pathogen And management	Pandey B.P. 2003 Pages 159-166
Week 3	4. Bacterial/Angular leaf spot disease of cotton 4.1 Distribution, symptoms, the pathogen And management	Pandey B.P. 2003 Pages 270-272
	5 Root Rot/Wilt disease of cotton	Dickson J.G. 1997

	5.1 Distribution, symptoms, the pathogen And management	Page, 372-374, 347-349
Week 4	6 Verticillium wilt of cotton 6.1 Distribution, symptoms, the pathogen And management	Rangaswami and Mahadewan,1999 Pages 429-432
	7 Anthracnose of cotton 7.1 Distribution, symptoms, the pathogen And management	Rangaswami and Mahadewan,1999 Pages 429-432
Week 5	8 Powdery Mildew of cotton	Dickson, 1997. Page,345-347
	9 *Fusarium* wilt of cotton	Dickson, 1997. Page,345-347
Week 6	10 Whip Smut of Sugarcane	PandeyB.P.2003 Page, 432-435
	11 Red Rot of Sugarcane	Mehrotra & Aggarwal 2003. Page, 530-533
Week 7	12 Ring Spot of Sugarcane	Pandey B.P. 2003 Page, 439-441
	13 Wilt of Sugarcane	Pandey B.P. 2003 Page, 439-441
Week 8	14 Rust and Ergot of Bajra	Pandey B.P. 2003 Page, 264-272
	Mid Test	
Week 9	15 Common Smut of Maize	PandeyB.P. 2003 Pages 245-250 Rangaswami and Mahadewan,1999 Pages 235-236
	16 Head Smut of Maize	PandeyB.P. 2003 Pages 245-250 Rangaswami and Mahadewan,1999 Pages 235-236
Week 10	17 Leaf Blight of Maize	PandeyB.P. 2003 Pages 245-250 Rangaswami and Mahadewan,1999 Pages 235-236
	18 Smut of Maize	PandeyB.P. 2003 Pages 245-250

		Rangaswami and Mahadewan,1999 Pages 235-236
Week 11	19 Rust of Maize	PandeyB.P. 2003 Pages 250-252
	20 Brown Spot of Maize	PandeyB.P. 2003 Pages 250-252
Week 12	21 Leaf Spot of Sorghum	PandeyB.P. 2003 Pages 260-261
	22 Head Smut of Sorghum	Mehrotra & Aggarwal 2003 Page, 416-417
Week 13	23 Downy Mildew of Sorghum	PandeyB.P. 2003 Pages 252-253
	24 Long Smut of Sorghum	Mehrotra & Aggarwal 2003 Page, 417-419
Week 14	25 Grain Smut of Sorghum	Mehrotra & Aggarwal 2003 Page, 437
	26 Gram Wilt	Mehrotra & Aggarwal 2003 Page, 477
Week 15	27 Gram Blight	Mehrotra & Aggarwal 2003 Page, 479-480
	28Charcoal Rot of Sunflower	Mehrotra & Aggarwal 2003 Page, 481-482
Week 16	Revision	
	Final	

Practical Course Contents		**Assignments/Readings**
Week 1	1.1 Demonstration of Symptoms and Disease Cycle of Bunt of Rice.	Representative disease specimens and Lab. Charts
Week 2	1.1 Demonstration of Symptoms and Disease Cycle of Blast of Rice	Representative disease specimens and Lab. Charts
Week 3	1.1 Demonstration of Symptoms and Disease Cycle of Grain Smut of Sorghum	Representative disease specimens and Lab. Charts
Week 4	1.1 Demonstration of Symptoms and Disease Cycle of Long Smut of Sorghum	Representative disease specimens and Lab. Charts
Week 5	1.1 Demonstration of Symptoms and Disease Cycle of Red Leaf Spot of Sorghum	Representative disease specimens and Lab. Charts
Week 6	1.1 Demonstration of Symptoms and Disease Cycle of Leaf blight of Maize.	Representative disease specimens and Lab. Charts
Week 7	1.1 Demonstration of Symptoms and Disease Cycle of Stalk rot of Maize.	Representative disease specimens and Lab. Charts

Week 8	**Mid Test**	
Week 9	1.1 Demonstration of Symptoms and Disease Cycle of Smut of Maize	Representative disease specimens and Lab. Charts
Week 10	1.1 Demonstration of Symptoms and Disease Cycle of Whip smut of sugarcane.	Representative disease specimens and Lab. Charts
Week 11	1.1 Demonstration of Symptoms and Disease Cycle of Red rot of Sugarcane	Representative disease specimens and Lab. Charts
Week 12	1.1 Field visit and collection of specimens.	Field visit and collection of specimens
Week 13	1.1 Field visit and collection of specimens	Field visit and collection of specimens
Week 14	1.1 Demonstration of Symptoms and Disease Cycle of Root rot of Cotton.	Representative disease specimens and Lab. Charts
Week 15	1.1 Demonstration of Symptoms and Disease Cycle of Anngular leaf Spot of Cotton	Representative disease specimens and Lab. Charts

Textbooks and Reading Material

1. Textbooks.

1. Chand. G., and S. Kumar. 2016. Crop Diseases and their Management: Integrated Approaches. CRC Press. Taylor and Francis Group; Milton Park, Didcot, UK.
2. Darwin L.C.H. 2011. Crop Diseases: Identification, Treatment and Management. New India Pub. Agency, New Delhi, India.
3. Mukerji, K.G. and K.L. Garg. 2021 Biocontrol of Plant Diseases. Taylor & Francis, Florida, USA.
4. Parthasarathy S., G. Thiribhuvanamala and K. Prabaka, 2020. Diseases of Field Crops and their Management. CRC Press, Florida, USA.
5. Srivastava, J.N. and A.K. Singh, 2020. Diseases of Field crops: Diagnosis and Management. Apple Academic Press, New York, USA.
6. Rangaswami, G. and A. Mahadevan. 2004. Diseases of Crop Plants in India. Prentice Hall, India.

1.1. Books

1.2. Journal Articles/ Reports

Note:

1. It is preferable to use latest available editions of books. Mention the publisher & year of publication.
2. The References/ bibliography may be in accordance with the typing manual of the concerned faculty/subject. Preferably follow APA 7th Edition publication manual.

Teaching Learning Strategies

1. White board and markers
2. Slide projector or multimedia
3. Overhead projector
4. Photocopy machine or photocopying facilities
5. Reference books
6. Journals

7. Internet (web sited literature)
8. Field Tours

Assignments: Types and Number with Calendar

1. Important Viral, bacterial and nematode diseases prevalent in the campus.
2. Economically important fungal diseases in the campus

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.