

<b>INSTITUTE</b>	<b>FACULTY OF AGRICULTURE</b>
<b>PROGRAM</b>	<b>BACHELOR OF SCIENCE (Hons.) AGRICULTURE</b>
<b>SEMESTER</b>	<b>6</b>
<b>COURSE TITLE</b>	<b>DISEASES OF FIELD AND HORTICULTURAL CROPS AND THEIR MANAGEMENT-II</b>
<b>COURSE CODE</b>	<b>16AS0609</b>
<b>COURSE CREDITS</b>	<b>3</b>

**Objective:**

- 1 To study the causal organism, symptomatology, etiology and epidemiology of the important diseases of field and horticulture crops for devising efficient management strategies against them.
- 2 To gain the knowledge about Identification, diagnosis and management of selected horticultural and field crops.

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Student will able to learn basic knowledge of the causal organisms and systematic positions involved in causing pathogens in crops are studied.
- 2 Student will develop the understanding about isolation of culture, techniques, identification and biology of pathogens in the laboratory.
- 3 Student will get demonstration of the field of horticultural, medicinal crops and cash crops; disease symptoms include pathogen, disease cycle, and best possible management practices and propose the solution of problems causing yield reduction in crops.
- 4 Student will apply fungicides and antibiotics (mode of action and formulations) on the basis of nature of pathogen, manage crops disease corresponding to involved pathogen and examine loss in quality and yield.
- 5 Student will develop the skills about detection and diagnosis of plant diseases and application of pesticides.

**Pre-requisite of course:**Basics regarding plant diseases.

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
2	0	2	50	30	20	25	25

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>1</b> Symptoms, etiology, disease cycle and management of field crops- Wheat: rusts, loose smut, karnal bunt, powdery mildew, alternaria blight, and ear cockle; Sugarcane: red rot, smut, wilt, grassy shoot and ratoon stunting; Sunflower: Sclerotinia stem rot and Alternaria blight; Mustard: Alternaria blight, white rust, downy mildew, powdery mildew and Sclerotinia stem rot; Gram: wilt, root rot and Ascochyta blight; Lentil: rust and wilt; Cotton: anthracnose, vascular wilt, and black arm; Pea: downy mildew, powdery mildew and rust	13
2	<b>2</b> Symptoms, etiology, disease cycle and management of horticultural crops- Mango: anthracnose, malformation, powdery mildew and red rust; Citrus: canker and gummosis; Grape vine: downy mildew, Powdery mildew and anthracnose; Guava: wilt and anthracnose; Ber: powdery mildew; Apple: scab, powdery mildew, fire blight; Peach: leaf curl; Strawberry: leaf spot; Sapota: leaf spot; Potato: early and late blight, black scurf, bacterial brown rot, scab, leaf roll, and mosaic; Cucurbits: downy mildew, powdery mildew, wilt; Onion and garlic: purple blotch, and Stemphylium blight; Chillies: anthracnose and fruit rot, wilt and leaf curl; Ginger: soft rot; Turmeric: leaf spots; Fenugreek: powdery mildew; Cumin: Alternaria blight, powdery mildew and wilt; Fennel: Ramularia blight, stem rot; Coriander: stem gall and powdery mildew; Cruciferous vegetables: Alternaria leaf spot and black rot; Marigold: blight; Rose: dieback, powdery mildew and black leaf spot	13
<b>Total Hours</b>		<b>26</b>

### Suggested List of Experiments:

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>1</b> Identification and histopathological studies of selected diseases of field and horticultural crops covered in theory	6
2	<b>2</b> Field visit for the diagnosis of field problems	2
3	<b>3</b> Collection and preservation of plant diseased specimens for herbarium	2
<b>Total Hours</b>		<b>10</b>

### Textbook :

- 1 NA, NA, NA, NA

### References:

- 1 Disease problem in vegetable production, Disease problem in vegetable production, Gupta, S. K. and Thind, T. S., Scientific Publishers, Jodhpur, 2012
- 2 Diseases of Fruit Crops, Diseases of Fruit Crops, Singh, R. S., Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 2012
- 3 Diseases of Crop Plants in India, Diseases of Crop Plants in India, Rangaswamy, G. and Mahadevan, A., Prentice hall of India Pvt. Ltd., New Delhi., 2001
- 4 Plant Diseases. (9th Ed), Plant Diseases. (9th Ed), Singh, R. S., Oxford & IBH Publishing Company Pvt. Ltd., New Delhi, 2009

### Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation

<b>Remember / Knowledge</b>	<b>Understand</b>	<b>Apply</b>	<b>Analyze</b>	<b>Evaluate</b>	<b>Higher order Thinking</b>
25.00	25.00	30.00	10.00	5.00	5.00

### Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board may also use any of tools such as demonstration, role play, quiz, brainstorming, MOOCs etc.
- 2 The internal evaluation will be done on the basis of continuous evaluation of students in the class-room.
- 3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
- 4 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.