Syllabus for B.Sc. (Hons) Agriculture Year – III (Sem. V)

Subject Code: 16AS1508

Subject Short Name: Pl. Path. 5.2

Subject Name: Diseases of Field and Horticultural Crops and Their Management

Objective:

1. To study the symptoms produced on the host.
2. To study the etiology of the diseases.
3. To know about the disease cycle of the pathogens during pathogenesis.
4. To study the epidemiological factors responsible for disease development
5. To study the management techniques for curbing the major diseases of field and horticultural crops

Credits Earned: 3 Credits (2+1)

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

- Understand disease cycle of field and horticultural crop diseases.
- Identify the symptoms of diseases.
- Get the knowledge regarding strategies for disease management.
- Apply different combinational strategies for the management of plant diseases.

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Progressive Assessment (PA)	Viva (V)	Term work (TW)	
2	0	2	3	40	20	20	10	10	100

Theory Content:

Unit	Topics	Contact Hours
1	Symptoms, etiology, disease cycle, epidemiology and management of Rice: Blast, brown spot, sheath blight, false smut, bacterial leaf blight, bacterial leaf streak, tungro, khaira	**1**

2	Symptoms, etiology, disease cycle, epidemiology and management of Wheat: rusts, loose smut, Karnal bunt and Maize: banded leaf and sheath blight, southern and northern blight, downy mildew	**2**
3	Symptoms, etiology, disease cycle, epidemiology and management of Sorghum: smuts, grain mold, anthracnose, Bajra: downy mildew, ergot and Finger millet: blast, leaf spot	**2**
4	Symptoms, etiology, disease cycle, epidemiology and management of Groundnut: early and late leaf spots, rust, wilt and Soybean: rhizoctonia blight, bacterial spot, seed and seedling rot, mosaic	**1**
5	Symptoms, etiology, disease cycle, epidemiology and management of Grams: Ascochyta blight, wilt, grey mold, Pea: downy mildew, powdery mildew, rust, Black gram and green gram: web blight, Cercospora leaf spot, anthracnose, yellow mosaic	**2**
6	Symptoms, etiology, disease cycle, epidemiology and management of Sugarcane: red rot, smut, grassy shoot, ratoon stunting, PokahBoeng and Cotton: anthracnose, vascular wilts, black arm	**1**
7	Symptoms, etiology, disease cycle, epidemiology and management of Mustard: Alternaria blight, white rust, downy mildew, sclerotinia stem rot and Sunflower: sclerotinia stem rot, Alternaria blight	**2**
8	Symptoms, etiology, disease cycle, epidemiology and management of Citrus: canker, gummosis and Papaya: foot rot, leaf curl, mosaic	**1**
9	Symptoms, etiology, disease cycle, epidemiology and management of Banana: sigatoka, Panama wilt, bacterial wilt, bunchy top, Guava: wilt, anthracnose and Pomegranate: bacterial blight	**1**
10	Symptoms, etiology, disease cycle, epidemiology and management of Apple: scab, powdery mildew, fire blight, crown gall and Peach: leaf curl	**1**
11	Symptoms, etiology, disease cycle, epidemiology and management of Grapevine: downy mildew, powdery mildew, anthracnose and Strawberry: leaf spot	**1**
12	Symptoms, etiology, disease cycle, epidemiology and management of Coconut: bud rot, Ganoderma wilt, Tea: blister blight and Coffee: rust	**1**
13	Symptoms, etiology, disease cycle, epidemiology and management of Mango: anthracnose, malformation, bacterial blight, powdery mildew	**1**
14	Symptoms, etiology, disease cycle, epidemiology and management of Potato: early and late blight, black scurf, leaf roll, mosaic	**1**
15	Symptoms, etiology, disease cycle, epidemiology and management of Tomato: damping off, wilt, early and late blight, leaf curl, mosaic, Brinjal: Phomopsis blight and fruit rot, sclerotinia blight, Chilli: anthracnose and	**2**

	fruit rot, wilt, leaf curl, Okra: yellow vein mosaic and Beans: anthracnose, bacterial blight	
16	Symptoms, etiology, disease cycle, epidemiology and management of Cucurbits: powdery and downy mildew, wilts and Cruciferous vegetables: Alternaria leaf spot, black rot, cauliflower mosaic	**2**
17	Symptoms, etiology, disease cycle, epidemiology and management of Ginger: soft rot, Turmeric: leaf Spot and Coriander: stem gall	**1**
18	Symptoms, etiology, disease cycle, epidemiology and management of Rose: dieback, powdery mildew, black leaf spot and Marigold: botrytis blight, leaf spots	**1**
	Total	**24**

Practical Content:

Unit	**Topics**	**Contact Hours**
1	Identification and histopathological studies of Rice: Blast, brown spot, sheath blight, bacterial blight	**2**
2	Identification and histopathological studies of green gram / black gram: downy mildew and powdery of cucurbits, rhizoctonia and Cercospora leaf spot	**2**
3	Identification and histopathological studies of mustard: Alternaria blight and downy mildew	**2**
4	Identification and histopathological studies of potato and tomato: early blight & late blight	**2**
5	Identification and histopathological studies of Phomopsis blight of brinjal	**2**
6	Identification and histopathological studies of Pea: powdery mildew and rust	**2**
7	Identification and histopathological studies of coriander: stem gall	**2**
8	Identification and histopathological studies of chili: anthracnose and fruit rot	**2**
9	Identification and histopathological studies of turmeric: taphrina leaf spot	**2**
10	Identification and histopathological studies of sugarcane: red rot	**2**
11	Field visit for the diagnosis of field problems, Collection and preservation of plant diseased specimens for herbarium.	**2**
	Total	**22**

Reference Books:

- Integrated Plant Disease Management by R.C. Sharma.2005. 1st Ed., Scientific Publisher.
- Plant Diseases by R.S. Singh. 2018. CBS Publishers & Distributors.
- Plant Disease Management: Principles and Practices by Hriday Chaube. 1991. CRC Press.
- Plant Pathology by G.N. Agrios. 2005. Elsevier.

Suggested Theory distribution:

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

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
25%	25%	20%	10%	10%	10%

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 white board may also use any of tools such as demonstration, role play, quiz, brain storming, MOOCs etc.
2. The internal evaluation will be done on the basis of continuous evaluation of students in the class-rooms.
3. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory/ field.
4. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.