

INSTITUTE	FACULTY OF AGRICULTURE
PROGRAM	BACHELOR OF SCIENCE (Hons.) AGRICULTURE
SEMESTER	4
COURSE TITLE	PRINCIPLES OF INTEGRATED DISEASE MANAGEMENT
COURSE CODE	16AS0408
COURSE CREDITS	2

Objective:

- 1 To study the strategies and tactics of IPM, pest monitoring, conventional methods of pest and diseases management and discussion about IPM programmes implementation done at domestic and international level.

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

- 1 Students will learn about the conventional methods of pest and diseases management and compare with IPM and IDM.
- 2 Students will be able to know about programmes of IPM and IDM implemented at domestic and international level.
- 3 Students will illustrate conventional methods of pest and diseases management and compare with IPM and IDM.
- 4 Students will identify major insect pests and diseases of different crops and their management and recommend implementation and impact of IPM and IDM.

Pre-requisite of course:To know about the different disease management techniques.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
1	0	2	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	1 Categories of diseases	1
2	2 IPM: Introduction, history, importance, concepts, principles and tools of IPM	1
3	3 Economic importance of diseases and pest risk analysis	1
4	4 Methods of detection and diagnosis of diseases. Calculation and dynamics of economic injury level and importance of Economic threshold level.	2

Contents : Unit	Topics	Contact Hours
5	5 Methods of control: Host plant resistance, cultural, mechanical, physical, legislative, biological and chemical control. Principles and methods of plant disease management. Ecological management of crop environment.	3
6	6 Introduction to conventional pesticides for the disease management. Survey surveillance and forecasting of diseases. Development and validation of IPM module.	3
7	7 Implementation and impact of IPM (IPM module for disease). Safety issues in pesticide uses. Political, social and legal implication of IPM. Case histories of important IPM programmes.	2
8	8 Nature, chemical combination, classification, mode of action and formulations of fungicides and antibiotics.	1
Total Hours		14

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	1 Methods of diagnosis and detection of various plant diseases	2
2	2 Methods of plant disease measurement	2
3	3 Assessment of crop yield losses calculations based on economics of IPM	2
4	4 Identification of biocontrol agents	2
5	5 Mass multiplication of Trichoderma, Pseudomonas, etc	2
6	6 Identification and nature of damage of important diseases and their management	2
7	7 Crop (agro-ecosystem) dynamics of selected diseases	2
8	8 Planning & assessment of preventive strategies (IPM module) and decision making	2
9	9 Crop monitoring attacked by diseases	2

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
10	10 Awareness campaign at farmers' fields	2
Total Hours		20

Textbook :

- 1 NA, NA, NA, NA

References:

- 1 Introduction to Principles of Plant Pathology, Introduction to Principles of Plant Pathology, R. S. Singh, xford & IBH Publishing Company Pvt. Ltd., 2017
- 2 Plant Pathology, Plant Pathology, P.D. Sharma, Rastogi Publication, 2013
- 3 Diseases of Crop Plants in India, Diseases of Crop Plants in India, G. Rangaswami, Prentice Hall India Private Limited, 1998

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					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking
25.00	25.00	20.00	10.00	10.00	10.00

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 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.
- 4 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.