

<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>PESTS OF HORTICULTURAL CROPS AND THEIR MANAGEMENT</b>
<b>COURSE CODE</b>	<b>16AS0605</b>
<b>COURSE CREDITS</b>	<b>2</b>

**Objective:**

- 1 To equip students with comprehensive knowledge and practical skills necessary to effectively identify, monitor, and manage pests in horticultural crops while promoting the utilization of beneficial insects for sustainable pest control and production as well.
- 2 To reduce and manage pests by not only killing them but by preventing feeding, multiplication and dispersal.

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

- 1 Student will familiarize with identification of different insect pest of field, horticulture, ornamentals, vegetables and stored grains at the field level.
- 2 Student will understand how insects affect animal and Plant health and agricultural production, and be able to safely manipulate populations of beneficial and destructive species in habitats and in production agro-ecosystems with minimal environmental impact.
- 3 Student will learn about the biology, diversity, distribution of insects, and their relationships to crop and the environment condition of a particular area.
- 4 Student will understand about the identification of nature of damage and symptoms caused by the pest so suitable technique of pest management can be apply for effective control.
- 5 Student will able to learn management of crop pest through Integrated Pest Management approach without side effect on plant, animal and environment health.

**Pre-requisite of course:** Students should know the basics regarding pests.

**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>
1	0	2	50	30	20	25	25

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>1</b> Distribution, biology, nature and symptoms of damage and management strategies of insect and non-insect pests of vegetable crops viz., brinjal, okra, tomato, potato, cruciferous and cucurbitaceous vegetables; pulse vegetables; leafy vegetables (spinach, amaranthus); sweet potato, elephant foot, yam, colacasia and moringa	5
2	<b>2</b> Distribution, biology, nature and symptoms of damage and management strategies of insect and non-insect pests of spices crops (chilies, onion, turmeric, garlic, ginger, coriander, cumin, fennel, fenugreek and curry neem leaf)	5
3	<b>3</b> Distribution, biology, nature and symptoms of damage and management strategies of insect and non-insect pests of fruit trees (mango, sapota, citrus, banana, cashew, pomegranate, custard apple, aonla, ber, guava, papaya and grape vine) and plantation crops (coconut, arecanut and date palm and ornamental plants)	4
4	<b>4</b> Plant protection in protected cultivation	1
<b>Total Hours</b>		<b>15</b>

#### **Suggested List of Experiments:**

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>1</b> Identification and nature of damage of pests of solanaceous vegetables; malvaceous vegetables; cruciferous crops; cucurbitaceous crops	2
2	<b>2</b> Identification and nature of damage of pests of chilies, onion and garlic; turmeric, ginger and colacasia	2
3	<b>3</b> Identification and nature of damage of pests of pulse vegetable, leafy vegetables; spinach, amaranthus and coriander, cumin, fennel, fenugreek, curry neem leaf	2
4	<b>4</b> Identification and nature of damage of pests of mango, sapota, guava, pomegranate, custard apple, citrus, ber, papaya, grape vine, moringa and aonla	2
5	<b>5</b> Identification and nature of damage of pests of coconut, areca nut and date palm; banana, cashew and ornamental plants	2
<b>Total Hours</b>		<b>10</b>

**Textbook :**

- 1 NA, NA, NA, NA

**References:**

- 1 Integrated Pest Management: Concepts and Approaches, Integrated Pest Management: Concepts and Approaches, Dhaliwal, G. S. and Ramesh, A., Kalyani Publishers, 2001
- 2 Theory and Practice of Integrated Pest Management, Theory and Practice of Integrated Pest Management, Dhawan, A. K., Singh, B. and Arora, B., Scientific Publishers, 2012
- 3 Management of Insect Pests of Horticultural Crops, Management of Insect Pests of Horticultural Crops, Gupta, H. C. L., Ameta, O. P. and Chechani, V. K., Agrotech Publishing Academy, 2005

**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	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 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.