

<b>INSTITUTE</b>	<b>FACULTY OF AGRICULTURE</b>
<b>PROGRAM</b>	<b>BACHELOR OF SCIENCE (Hons.) AGRICULTURE</b>
<b>SEMESTER</b>	<b>5</b>
<b>COURSE TITLE</b>	<b>PESTS OF FIELD CROPS, STORED GRAINS AND THEIR MANAGEMENT</b>
<b>COURSE CODE</b>	<b>16AS0505</b>
<b>COURSE CREDITS</b>	<b>2</b>

**Objective:**

- 1 To provide information on nature of damage and eco-biology of important agricultural and horticultural pests.
- 2 To provide information regarding integrated pest management strategies for agricultural and horticultural crops.

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

- 1 Students will able to recognise the pest and natural enemies on various crops and understand typical damage symptoms caused by pests and their management strategies.
- 2 Students will be able to prepare sustainable pest management strategies based on pest prediction model.
- 3 Students will demonstrate survey and surveillance techniques for insect pest prediction.
- 4 Student will calculate the accurate dose of pesticides and their appliances and estimate the yield losses caused by major insect pests.

**Pre-requisite of course:**To study about the different pests of field crops, store grains and their management.

**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> General account on nature and types of damage by different arthropods pests	2
2	<b>2</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of paddy, sorghum	2

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
3	<b>3</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of maize, pearl millet	1
4	<b>4</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of ragi (Eleusine coracana), wheat	2
5	<b>5</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of sugarcane, cotton	1
6	<b>6</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of Sunhemp, Pulses	2
7	<b>7</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of groundnut, castor	2
8	<b>8</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of Sesame, Safflower	1
9	<b>9</b> scientific name, order, family, host range, distribution, biology and bionomics, nature of damage and management of insect and non-insect pests of Sunflower, mustard, soybean, tobacco	1
10	<b>10</b> Common 14 phytophagous mites, rodents, snail, slug, crab and bird pests. Stored grain pests: Coleopteran and Lepidopteran pests, their biology and damage, preventive and curative methods.	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, damage symptoms and management of pests of paddy, pearl millet	2
2	<b>2</b> Identification, damage symptoms and management of pests of sorghum, maize	2
3	<b>3</b> Identification, damage symptoms and management of pests of wheat, sugarcane	2

### Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
4	<b>4</b> Identification, damage symptoms and management of pests of cotton, pulses	2
5	<b>5</b> Identification, damage symptoms and management of pests of tobacco, groundnut	2
6	<b>6</b> Identification, damage symptoms and management of pests of sesame, sunflower	2
7	<b>7</b> Identification, damage symptoms and management of pests of castor, mustard	2
8	<b>8</b> Identification, damage symptoms and management of pests of soybean, safflower	2
9	<b>9</b> identification of common phytophagous mites and their morphological characters	2
10	<b>10</b> Identification of rodents and bird pests	2
11	<b>11</b> Visit to Indian Storage Management and Research Institute, Hapur and Quality Laboratory, Department of Food, Delhi/ Visit to nearest FCI/ civil supplies godowns.	2
<b>Total Hours</b>		<b>22</b>

### Textbook :

- 1 NA, NA, NA, NA

### References:

- 1 Insecta, Insecta, N. Natarjann, K.N. Raghumorthy, V. Balasuramani and M. R. Srinivasan, A. E. Publication, 2019
- 2 Applied Entomology, Applied Entomology, D. S. Reddy, New Vishal Publication, 2022
- 3 handbook of entomology, handbook of entomology, T. V. Prasad, New Vishal Publication, 2014

### 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	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.