# COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

## GENERIC ELECTIVES (GE-3): Economic Zoology

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Economic Zoology | 04 | 02 | Nil | 02 | Class XII pass | NIL | Zoology |

### Learning Objectives

The learning objectives of this course are as follows:

- It deals with the application of zoological knowledge for the benefit of mankind by understanding the economy, health and welfare of humans.
- It includes culturing organisms for mass production for human use and to control or eradicate harmful ones.
- It will bring to the fore the multidisciplinary nature of Economic Zoology as it includes sericulture, apiculture, aquaculture, pisciculture and insect pests of agriculture.

### Learning Outcomes

By studying this course, students will be able to

- develop an understanding of the beneficial higher and lower organisms in terms of economic prospective.
- aquatic organisms and agriculturally important insect pests based on their morphological characteristics/structures.
- develop a critical understanding of the contribution of organisms to the welfare of society.
- examine the diversity of insect pests of different orders in the agro-ecosystem and sustainable pest management strategies.

### SYLLABUS OF GE-3

**UNIT – I Aquaculture** **(2.5 Weeks)**

Definition, scope, and significance of Aquaculture, Prawn culture, Pearl culture, Edible Oyster culture.

**UNIT – II Pisciculture** **(3.5 Weeks)**

Basic concept on mono and composite fish culture (Carp culture); Fish diseases caused by *Ichthyophthirius multifilis, Trichodinia* sp. and *Ichthyobodo* sp., symptoms and control; Maintenance of aquarium.

**UNIT – III Sericulture** **(2.5 Weeks)**

Different species and economic importance of silkworm, Mulberry and Non-mulberry Sericulture (Eri, Muga, Tussar), Sericulture techniques.

**UNIT – IV Apiculture** **(2.5 Weeks)**

Different species of Honeybee, types of beehives - Newton and Langstroth, Bee Keeping equipment, Methods of extraction of honey (Indigenous and Modern) and its processing, Products of apiculture industry (Honey, Bees Wax, Propolis, Royal jelly, Pollen etc.) and their uses.

**UNIT – V Agricultural Crop Pest and Management** **(4 Weeks)**

Bionomics of crop pests of rice (*Leptocorisa acuta*); sugarcane (*Pyrilla perpusilla*); vegetable (*Raphidopalpa foveicollis*); and stored grain (*Corcyra cephalonica*); Pest Management Strategies (Physical, Chemical & Biological)

**Practical component -**

1. Study of aquatic organisms - prawns, oysters and fishes (*any three)* through museum specimens in the laboratory with details on their classification, distribution and specialized features.
2. Study of different species of aquarium fishes (Goldfish, Guppy, Swordtail fish) and maintenance of aquarium in lab/indoor.
3. Study of major crop pests of rice (*Leptocorisa acuta*), sugarcane (*Pyrilla perpusilla*), vegetable (*Raphidopalpa foveicollis*) and stored grain (*Corcyra cephalonica*) belonging to different orders.
4. Study of *Bombyx mori*, its life cycle and economic importance.
5. Study of the life history of honeybee, *Apis cerana indica* and *Apis mellifera* from specimen/ photographs - egg, larva, pupa, adult (queen, drone, worker)
6. Study of artificial hive (Langstroth/Newton), its various parts and beekeeping equipment.
7. Project report on life cycle of any one crop pest or on a product obtained from apiculture industry.
8. Field study/lab visit to an apiary/honey processing unit/sericulture institute/aquarium shop/fish farm/pisciculture unit.

**Essential/recommended readings**

1. Atwal, A.S. (1993) Agricultural Pests of India and Southeast Asia. Kalyani Publishers, New Delhi.
2. Shukla, G.S. and Upadhyay, V.B.: Economic Zoology, 4e, 2002, Rastogi.

3. D. B. Tembhare. (2017) Modern Entomology. Published by Himalaya Publishing House (ISO 9001: 2008 Certified).
4. Dawes, J. A. (1984) The Freshwater Aquarium, Roberts Royee Ltd. London.

**Suggestive readings**

1. S.S. Khanna and H.R. Singh. A Textbook of Fish Biology & Fisheries Published by Narendra Publishing House.3rd Edition. (ISBN13: 9789384337124)
2. Dokuhon, Z.S. (1998). Illustrated Textbook on Sericulture. Oxford & IBH Publishing Co., Pvt. Ltd. Calcutta.

## GENERIC ELECTIVES (GE-4): Lifestyle Disorders

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Lifestyle Disorders | 04 | 02 | Nil | 02 | Class XII pass | NIL | Zoology |

### Learning Objectives

The learning objectives of this course are as follows:

- The course aims to introduce the students to the concept of health, nutrition, and the factors affecting it.
- It will apprise students of the prevalence of emerging health issues affecting the quality of life.
- The course will facilitate the understanding of different physical and psychological associated disorders and their management for a healthy lifestyle.
- It highlights the important lifestyle-related disorders and describes the risks and remedies in relation to adopting a better life.

### Learning Outcomes

By studying this course, students will be able to

- have a better understanding of lifestyle choices and the diseases associated with them.
- have an in-depth understanding of making better lifestyle decisions.
- learn about various techniques for preliminary diagnosis of lifestyle disorders

### SYLLABUS OF GE-4