

**First Degree Programme  
Semester VI  
Zoology Open Course II  
Economic Zoology - Vermiculture and Apiculture  
Course Code – ZO1651.1**

**No. of credit – 2**

**Total hours 54**

**Aim of the course**

To promote self employment and self reliance among educated youth

**Objectives of the course**

- To learn the basic procedure and methodology of vermiculture
- To learn the scope and methodology of apiculture.

**Vermiculture 24hrs**

**Module I**

**6hrs**

Introduction: definition and scope of vermiculture. Nature and species of earthworms: habit categories – epigeic, endogeic and anecic, indigenous and exotic species (*Eudrillus eugeniae/Eisenia foetidae/Perionyx excavatus/ Lampito mauritii*), identification of the above four species based on morphological characters.

**Module II**

**10hrs**

Methodology of vermicomposting: step by step methodology – containers for culturing, raw materials required, preparation of bed, environmental pre-requisites, feeding, harvesting, and storage of vermicompost. Advantages of composting, precautions to be taken to prevent attack by pests and pathogens.

**Module III**

**8hrs**

Vermicompost profile and applied aspects: physical, chemical and biological parameters of vermicast, vermin enrichment, economic uses of vermiculture (biofertilizer, waste disposal, vermiwash, poultry feed, vermi-remediation etc.

**Apiculture**

**30hrs**

**Module IV**

**8hrs**

Introduction and Scope: Definition and significance of the study. Caste system and Social behavior; common species of honeybees used, organization of bee colony, social life and adaptations of honeybees.

**Module V**

**12hrs**

Bee keeping methods and equipments: indigenous methods, extraction appliances, extraction of honey from the comb and processing, management and maintenance of an apiary, bee pastures

**Module VI**

**10hrs**

Diseases and economics: diseases (bacterial, fungal, protozoan, acarine, brood diseases), preventive and curative measures. Use of honey, bees wax, bee venom, nutrient profile of honey, marketing strategies.

**NB:Assignments/ Seminar** – Topics related to syllabus can be given to students as assignment/ seminar.

**References**

1. Cherian & Ramachandran Bee keeping in *South Indian* Govt. Press, Madras.
2. Gupta, K.C. Romance of bee keeping. Khadi Paristhan, Calicut.
3. Mary Appelhof. Worms eat my Garbage.
4. Mishra R.C. Perspectives in Indian Apiculture
5. Sathe, T.V. Vermiculture and Organic farming.