

ENTOMOLOGY
MASTER OF SCIENCE IN AGRICULTURAL ENTOMOLOGY (Semesters 1- 4)

ENT 611 INSECT MORPHOLOGY AND CLASSIFICATION (2+1)

Course outcomes

CO1: Identify and describe the different body regions, sclerites, appendages and their modifications in insects and metamorphosis in insects. Interpret the need for specific modifications.

CO2: know differences between Taxonomy and Systematics and be expert in running taxonomic keys for identification of insects at family level.

CO3: Analyse diagnostic features of Non-insect orders, Exopterygote orders and Endopterygote orders.

CO4: Evaluating the insect species diversity in various ecosystems. CO5: Create permanent slides and develop insect collection.

ENT 612 INSECT ANATOMY, PHYSIOLOGY AND NUTRITION (2+1)

Course Outcomes

CO1: Capable of identifying structure, modification and physiology of digestive and excretory system. Describe their role in energy metabolism and Homeostasis respectively.

CO2: Describe Respiratory and Circulatory, Anatomy & Physiology and their role in thermoregulation.

CO3: Capable of identifying various components of Nervous system and describe ion channels and Nerve physiology can explain various sense organs and their

function. Describe role played by Endocrine glands and their Hormonal secretions can CO

CO4: Explain importance of Ecdysone and JH. Identify various Reproductive methods and physiology of reproduction.

CO5: Understand the Embryological growth in insects and development of various systems can explain role of various nutrients on the growth and symbionts impact on insects.

ENT 613 INSECT ECOLOGY, PEST MANAGEMENT, STORAGE AND QUARANTINE ENTOMOLOGY (2+1)

Course Outcomes

CO1: Describe the role of ecology in population dynamics of insects and describe the link between ecology and pest management.

CO2: Explain concepts of IPM, ETL, EIL, role of sampling & AESA and capable of identifying & implementing various components of IPM.

CO3: Describe various stored product pests and their management.

CO4: Describe various Quarantine measures and legislation for export & import of Agricultural produce. Understand the importance of invasive insects and their impact on Agriculture.

CO5: Estimate pest intensity through damage assessment and implement pest management.

ENT 621 TOXICOLOGY OF INSECTICIDES (2+1)

Course Outcomes

CO1: Knowledge on the response of animals/insects to poisons and their measurements.

CO2: Familiarity with different types of pesticide classifications and their chemistry.

CO3: Knowing the target sites of pesticides, their actions, how can the activity be increased, compatibility among chemicals and phytotoxicity grading.

CO4: Understanding the degradation of insecticides in environment, plants and animals. Knowing of methods to handle insecticides and to estimate residues and waiting period. CO5: Collective idea about the pesticide usage and industries in globe and India. Knowledge on enforcement of insecticide act, registration of insecticides, development of toxicology data and ethics in animal use.

ENT 622 BIOLOGICAL INSECT PEST SUPPRESSION (2+1)

Course Outcomes

- CO1: Describe about the biological control agents like Predators, parasitoids, pathogens and others
- CO2: Illustrate biology, adaptations, mass production and release techniques of insect predators and parasitoids
- CO3: Explain about bacteria, viruses, fungi, protozoans and rickettsiae and their symptoms of infections, mass production and field release.
- CO4: Describe about role of non insect predators and weed killers in biocontrol programmes
- CO5: Have knowledge on implications of biocontrol programmes, successful stories and utilization of exotic natural enemies

ENT 623 PESTS OF CROPS AND THEIR MANAGEMENT (2+1)

Course Outcomes

- CO1: Define bionomics, symptoms of damage and integrated management strategies for pests of cereals, millets and pulses
- CO2: Discuss bionomics, symptoms of damage and integrated management strategies for pests of Oilseeds, Cotton, Sugarcane, Green Manures, Forage Crops and Tobacco
- CO3: Explain bionomics, symptoms of damage and integrated management strategies for pests of Vegetables, Tubers, Spices and Plantations
- CO4: Define bionomics, symptoms of damage and integrated management strategies for pests of Fruits and Ornamentals
- CO5: Discuss bionomics, symptoms of damage and integrated management strategies for pests of Medicinal Plants Tree, Lawn, Mushroom and green house crops
- CO6: Illustrate identification and biology of major pests of crops and storage through rearing and collection

ENT 624 PLANT RESISTANCE TO PESTS (2+1)

Course Outcomes

- CO1: Understand the importance of plant resistance, host searching behavior in relation to plant factors, environmental impact of resistance and factors influencing expression of resistance.
- CO2: Capable to explain about the morphological and anatomical basis of resistance.
- CO3: Describe about the bio chemical basis of resistance and bio chemistry of induced resistance.
- CO4: Explain about the biotechnological approaches in host plant resistance.
- CO5: Capable of utilizing the resistant varieties in IPM and explain about the methods in development of transgenic plants.