PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES, COURSE OUTCOMES
Ph. D. Entomology

Programme outcome	Entomologists commonly work with Plant Breeders, Farmers, Agronomists, Horticulturists, Pathologists etc. in the fields, farms and gardens wherever plants grow. Additionally, Entomologists engage with biological scientists and engineers to create safer living arrangements and achieve high yield and potential boost to the Indian agriculture economy.
Programme specific outcome	Expertise in the identification, life history and ecology of insect pests and predators/ parasites as well as the basic principles and strategies of their management. Aspirants of Entomology, comprises with the basic knowledge and technologies used in Apiculture, Nematology, Sericulture, Biological control Toxicology, Economic Entomology etc. Interdisciplinary research work is also being carried out, with the different departments like Plant Pathology, Biochemistry, Molecular biology, Soil science, Horticulture, Agronomy etc. The knowledge acquired and skill developed in the field of entomology, help in recognizing the applications of latest technologies in all spheres of agriculture and develop crops with improved productivity thereby increasing farmers' income, better human health and decreased environmental pollution as well as meet out the future challenges in agricultural crops and storage grains.
COURSE: Ph.D. Entomology	**OUTCOMES**
Ph.D. Entomology 1st Sem.	
Major	
Advanced Insect Systematics (ENT 601)	CO 1: Familiarize the students with different schools of classification. CO2: Phylogenetics, classical and molecular methods, evolution of different groups of insects. CO 3: International Code of Zoological Nomenclature. CO 4: Ethics and procedure for taxonomic publications.
Immature Stages of Insects (ENT 602)	CO 1: Impart knowledge on morphology of immature stages of different groups of insects. CO 2: Train students in identification of common pest species during their immature stages.
Advanced Insect Physiology (ENT 603)	CO 1: Impart knowledge to the students on detailed physiology of various secretory and excretory systems. CO 2: Description of moulting process, chitin synthesis, CO 3: Description of physiology of digestion, transmission of nerve impulses. CO 4: Description of nutrition of insects, pheromones etc.

Advanced Insect Ecology (ENT 604)	CO 1: Impart advanced practical knowledge of causal factors governing the distribution and abundance of insects CO 2: Description of the evolution of ecological characteristics.
Minors	
	The student shall have the option to take two split minor subjects depending upon his / her research problem (minimum 8 credit hours) in the related subjects viz. Plant Pathology, Agronomy, Soil Science, Vegetable Science and Fruit Science in 500 series courses
Ph.D. Entomology, 2nd Sem.	
Major	
Recent Trends in Biological Control (ENT 606)	CO 1: Appraise the students with advanced techniques in handling of different bio-agents CO 2: Described modern methods of biological control CO 3: Scope of bio-agents in cropping system-based pest management in agro-ecosystems.
Advanced Insecticide Toxicology (ENT 607)	CO1: Acquaint the students with the latest advancements in the field of insecticide toxicology. CO2: Describe the biochemical and physiological target sites of insecticides CO 3: Explained the pesticide resistance mechanisms in insects.
Advanced Insect Pest Management (ENT 612)	CO 1: Acquaint the students with recent concepts of integrated pest management. CO 2: Surveillance and data base management. CO 3: Successful national and international case histories of integrated pest management CO 4: Role of non-conventional tools in pest management.
Minor	
	The student shall have the option to take two split minor subjects depending upon his/ her research problem (minimum 8 credit hours) in the related subjects viz. Plant Pathology, Agronomy, Soil Science, Vegetable Science and Fruit Science in 500 series courses
Supporting course	
	The student shall have the option to take minimum five credits in the supporting subject in 500 series courses. The supporting subject will not be related to the major subject. It could be any subject considered relevant for student's research work
Ph.D. Entomology, 3rd Sem. onwards	
Doctoral Research (ENT 699)	CO 1: Identification of important pest problem of essential food and forage crops. CO 2: Minimizing the impact of those pests as major research objective, with emphasis on taxonomy, molecular studies, integrated management, toxicology etc.