

Semester:	05		
Course Code:	ZOOL 41703		
Course Name:	Insect Biology and Systematics		
Credit Value:	03		
Status:	Compulsory		
Pre-requisite:	ZOOL 12703		
Co-requisite:	ZOOL 41711		
Hourly breakdown:	Theory	Practical	Independent Learning
	45	-	105

Intended Learning Outcomes:

After completion of this course unit, the student will be able to:

1. describe the morphology of a typical adult insect, giving annotated diagrams of integument, mouthparts, appendages and wings,
2. discuss morphological variations in insect locomotory appendages and mouthparts in relation to habits and habitats,
3. classify insects to selected orders and families based on morphological features,
4. describe the structure and explain the functioning and functions of each organ system and sensory organs,
5. describe morphology of immature life stages in common insect orders, and
6. discuss processes and types of post- embryonic development in insects.

Course Content:

Morphology of a typical insect; integument and associated structures, Types of antennae, morphology of mouthparts and common feeding habits, structure and functions of selected insect legs, insect phylogenetics, classifying insects to following orders/suborders based on major morphological features, typical life cycles and importance of members; Thysanura, Blattodea, Mantodea, Neuroptera, Orthoptera, Hemiptera, Anoplura, Mallophaga (Phthiraptera), Coleoptera, Lepidoptera, Thysanoptera, Diptera including Chironomidae, Simuliidae and Culicidae, Dermaptera, Phasmatodea, Siphonaptera, Isoptera, Ephemeroptera, Odonata, Plecoptera and Trichoptera and, biological aspects of selected insect families. Structure, functioning including mechanisms, functions and control of following systems: muscular, digestive, respiratory (in terrestrial and aquatic insects), circulatory, excretory, male and female reproductive systems, endocrine and nervous. Visual organs and vision, sound producing organs and sound production, auditory organs, Light producing organs and bioluminescence, other sensilla, exocrine glands and insect pheromones. Metamorphosis: ecdysis, insect growth, Dyar's law and types of post-embryonic development including hormonal control.

Teaching/ Learning Methods:

A combination of lectures, assignments, computer-based learning, and student seminars.

Assessment Strategy:

Continuous assessment and end of semester examination. Percentage given for each sub-component indicates the percent contribution to the final marks.

Continuous Assessment 30 %	Final Assessment 70 %
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Details:		Theory	Practical	Other
Quizzes	10 %	70 %	-	-
Mid-semester examination	10 %			
Student seminars	10 %			
Recommended Readings:				
1. Gullan, P.J. & P. S. Crantson (2010). The insects - an outline of entomology, 10th edition. Chapman and Hall, London (e-book available). 2. Triplehorn C. A. & N. F. Johnson (2005). Borror and Delong's Introduction to the study of insects. Seventh edition. Brooks/ Cole, USA (e-book available). 3. Chapman, R.F. (2013). The Insects. Structure and function. (Editors: Simpson, S.J. & A. E. Douglas). 5th edition. Cambridge University Press (e-book available).				