

Semester:	08		
Course Code:	ZOOL 42853		
Course Name:	Medical and Veterinary Entomology		
Credit Value:	03		
Status:	Compulsory		
Pre-requisites:	ZOOL 41703 & ZOOL 41711		
Co-requisite:	None		
Hourly Breakdown:	Theory	Practical	Independent Learning
	35	30	85

Course Aim/Intended Learning Outcomes:

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

1. describe morphology, biology and life histories of medically and veterinary important insects, ticks and mites,
2. discuss the factors affecting vector-borne diseases,
3. explain and assess the resistance development in major vector mosquito species against insecticides,
4. discuss mosquito vector surveillance techniques,
5. explain environmental changes on emerging and resurging of vector-borne diseases,
6. design strategies and recommend appropriate management measures for medically and veterinary important insects, ticks, mites and
7. demonstrate practical skills on sampling, collecting and identifying medically and veterinary important insects, ticks and mites.

Course Content:

Medical Entomology: Introduction to history of medical entomology, role of the medical entomologist. Arthropods as vectors of disease agents and as pests of hygiene. Factors involved in vector-borne diseases. Factors affecting pathogen transmission by vectors. Transmission of parasites by arthropod vectors. External morphology, life histories and biology of blood sucking insects and mites. Arthropod vectors other than mosquitoes. Bionomics of major vectors and vector-borne diseases in Sri Lanka: past, current, and future with respect to malaria, filariasis, Japanese encephalitis, dengue, Chikungunya, relapsing fever, typhus fever, leishmaniasis, plague and scrub typhus. Epidemiology and methodologies adopted in prevention and management of each vector-borne disease. Insecticide resistance in mosquitoes: development, mechanism, and monitoring. Vector mosquito surveillance with special reference to dengue vectors. Host preference behaviour of blood sucking insects. Environmental changes and vector-borne diseases. Emerging and resurging vector-borne diseases. Invasion by insect vectors of human diseases.

Veterinary Entomology: Introduction to Veterinary Entomology. Identification, classification, life history patterns and injuries caused by species of fleas, biting and sucking lice, ticks and adult flies in domestic and farm animals. Species of flies causing myiasis. Mite species causing sarcoptic and psoroptic mange. Methodologies adopted in prevention and management of veterinary important species of insects, ticks and mites.

Laboratory sessions on sampling techniques, collection, and identification of medically and veterinary important species of insects, ticks and mites. Mosquito vector surveillance. Insecticide resistance monitoring in main vector mosquitoes. Identification of lice, fleas, ticks and mite species of animals using pictorial guides and taxonomic keys.

Teaching /Learning Methods:

A combination of lectures, laboratory and field sessions, assignments, self-studies, computer based learning, and group discussions.

Assessment Strategy:

Continuous assessments 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 %		
Details:		Theory 50 %	Practical 20 %	Other none
Assignments	10 %			
Laboratory reports	10 %			
Presentations	10 %			

Recommended Readings:

1. Eldridge, B.F. & J. Edman (2003). Medical Entomology: A Textbook on Public Health and Veterinary Problems Caused by Arthropods, Kluwer academic publishers.
2. Mullen, G.R. & L. A. Durden (2009). Medical and Veterinary Entomology, Second Edition, Academic Press.
3. Service, M. (2012). Medical Entomology for students, 5th Edition, Cambridge University Press
4. Kettle, D.S. (1998). Medical and Veterinary Entomology (1998). 2nd Edition, CABI Publishing
5. Lehan, M. (2005). The Biology of Blood Sucking Insects. 2nd Edition, Cambridge University Press.
6. Wall, R. & D. Shearer (2001). Veterinary Ectoparasites: Biology, Pathology and Control 2nd Edition, Blackwell Science Ltd.