

Course Code	Course Name	Credits
26ZY106	INSECT VECTORS AND DISEASES	04

Course Objectives

- To understand the role of insects as vectors of diseases.
- To study the biology and ecology of vector insects.
- To develop knowledge on transmission of vector-borne diseases.
- To understand vector control methods and public health management.
- To enhance awareness on emerging vector-borne diseases.

Learning Outcomes

- Explain the importance of insect vectors in disease transmission.
- Identify major vector insects and associated diseases.
- Demonstrate knowledge of vector ecology and life cycles.
- Analyze methods of vector control and disease prevention.
- Apply vector management strategies in public health.

Unit 1 - Introduction to Insect Vectors (12 Hrs.)

Definition and importance of vectors; types of insect vectors; biology and ecology of mosquitoes, houseflies, sandflies and tsetse flies; vector-host interactions.

Unit 2 - Mosquito-Borne Diseases (12 Hrs.)

Malaria, dengue, chikungunya, filariasis and Japanese encephalitis; vector species involved; transmission cycle; epidemiology and prevention.

Unit 3 - Other Vector-Borne Diseases (12 Hrs.)

Sleeping sickness, kala-azar, plague and typhus; role of sandflies, fleas and lice; transmission mechanisms; public health significance.

Unit 4 - Vector Control Methods (12 Hrs.)

Chemical, biological and environmental control methods; insecticides and resistance; integrated vector management; genetic control of vectors; community participation.

Unit 5 - Emerging Vector-Borne Diseases (12 Hrs.)

Climate change and vector distribution; surveillance and monitoring; zoonotic diseases; public health programmes; future challenges in vector management.

Reference Books:

1. Service, M.W. (2018). Medical Entomology for Students. Cambridge University Press.
2. Pedigo, L.P. (2019). Entomology and Pest Management. Waveland Press.
3. Chapman, R.F. (2017). The Insects: Structure and Function. Cambridge University Press.
4. WHO (2021). Vector-Borne Diseases Manual. World Health Organization.
5. Gullan, P.J. and Cranston, P.S. (2016). The Insects: An Outline of Entomology. Wiley.

Websites and eLearning Sources:

1. <https://www.who.int/>
2. <https://www.cdc.gov/>
3. <https://www.ncbi.nlm.nih.gov/>

