**ENTO-405 Insecticides and Their Application 3 (2+1)**

This course aims to provide information to students about concept of toxicity and insecticide formulations, mode of action, residues of insecticides and various types of spray equipment. Course includes the description about the classification of different insecticide formulations on basis of their mode of entry in to target insect body, on basis of their chemical nature, mode of action, toxicity level and formulation types. Moreover, basic structural and functioning principles of major insecticide application apparatus are discussed in this course.

*Contents (Theory)*

1. Introduction to insecticides and their application
2. Nomenclature of insecticides
3. Classification on the basis of mode of entry
4. Classification on the basis of chemical nature (natural and synthetic insecticides)
5. Classification on the basis of mode of action
6. Classification on the basis of toxicity
7. Classification on the basis of formulations
8. Compatibility, physico-chemical properties, residues of insecticides
9. Insecticide resistance and its management
10. Hazards and safety measures
11. Functioning of various types of hand and power operated equipment for insecticide application
12. Types of nozzles
13. Information about insecticide legislation.

*Contents (Practical)*

1. Computation, preparation and field application of different formulations of insecticides
2. Identification, classification, handling and maintenance of application equipment
3. Visit to pesticides industries/field visits.

*Recommended Texts*

1. Pedigo, L.P. & Marlin, E. R. (2009). *Entomology and Pest Management*(6th ed.).New Jersey: Person Education Inc.
2. Saleem, M.A. (2009). Principles of Insect Toxicology. Pakistan: Izhar sons Printers. Lahore.

*Suggested Readings*

1. Dodia, D.A. Petel, I.S. & Petal, G.M. (2008). *Botanical Pesticides for Pest Management*. Jodhpur, India: Scientific Publishers.
2. Ishaaya, I. & Degheele, D. (1998). *Insecticides with Novel Modes of Action: Mechanism and Application.* New Delhi: Norosa Publishing House.
3. Mathews G.A. (2002). *Pesticide Application Methods* (4th ed.). UK: Intercept Ltd.