

Programme: M. Sc. (Zoology)

Course Code: ZOC-205

Title of the Course: Laboratory Course II based on (ZOC 201, 202, 203 & 204)

Number of Credits: 4

Effective from AY: 2018-19

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| <u>Prerequisites for the course:</u> | Basic working knowledge of classical genetics, animal anatomy, Physiology, Taxonomy, Systematics, embryology, Molecular biology, Signal transduction, insects, their classification, beneficial and harmful insects in agriculture. | |
| <u>Objective:</u> | Laboratory training based on courses ZOC 201, 202, 203 & 204. | |
| <u>Content:</u> | <p>Module 1: Demonstration of Green and Red Fluorescence proteins for monitoring gene expression; Observation of DNA fragmentation in apoptotic cells; Culture and maintenance of <i>Drosophila</i>; Study of Life cycle of <i>Drosophila</i>; Mutant Phenotypes of <i>Drosophila</i>; Paper chromatographic separation of proteins (<i>Drosophila</i> eye pigments); Study of transcriptional activity in Polytene chromosomes; Induction of phenocopies in <i>Drosophila</i>; Mounting of the eggs and sex combs of <i>Drosophila</i>.</p> <p>Module 2: Transport of glucose and amino acids across the intestine of Poultry birds (tissues to be collected from slaughter house); Study of human lung volume during exercise; Estimation of heart rate, pulse rate and blood pressure changes during exercise, Study of ECG and its evaluation in normal and pathological variations, Study the effect of load on muscle contraction on man; To evaluate the memory of provided subject using memory drum.</p> <p>Module 3: Identification of developmental stages of chick embryo; Chick embryo culture, in vitro; Changes in biochemical profiles of developing chick embryo; Effect of thyroxine/ retinoic acid/ proline/ pesticide in developing chick embryo; Organogenesis, preparation of slides and studies of 96 hrs chick embryo.</p> <p>Module 4: Collection, preservation and identification of agriculturally important insects. Study of insect body parts (antennae, wings, appendages etc.,) Study of insect pests of Paddy. Study of insect pests of cereals, Study of insect pests of sugarcane/ coconut, Detection of insect pest infestation in agriculture, Appliances of insect pest control. Study of pests of household. Study of insect pests of storage. Study of pests of Live stock.</p> | 24 hours 24 hours 24 hours 24 hours |
| <u>Pedagogy:</u> | Practical/ mini project. | |
| <u>References/Readings</u> | As mentioned under individual course ZOC 201, 202, 203 & 204. | |
| <u>Learning Outcomes</u> | Laboratory training based on courses ZOC 201, 202, 203 & 204. | |