

Course Code: ZOC 105
 Number of Credits: 4
 Effective from AY: 2020 -21

Course Title: Laboratory Course I

Prerequisite for the Course:	Basic working knowledge of animal systematics, animal anatomy, biochemistry, molecular biology.	
Objectives:	Laboratory hands on training in certain area of systematics, anatomy, biochemistry and molecular biology. To do a field Survey.	
Content:	<p>Animal Taxonomy and Systematics</p> <p>1. Systematic analysis with proper morphological keys and construction of Phylogenetic keys of the following:</p> <ul style="list-style-type: none"> - Malacofauna - Lepidoptera - Avifauna - Ichtyofauna - Araneae <p>Anatomy of Non Chordates</p> <p>I. Dissection</p> <p>1. Study of Nervous, in Cockroach/Crab (collected from market)</p> <p>2. Digestive in Prawn (collected from market)/Cockroach and</p> <p>3. Reproductive system in Cockroach.</p> <p>II. Mounting</p> <p>1. Mounting of Heart in Bivalves</p> <p>2. Mounting of Visceral and Pedal ganglia in Bivalves.</p> <p>3. Comparative study of mouth parts in insects.</p> <p>Biochemistry</p> <p>1. Extraction and Estimation of major bio molecules in different tissues of fish.</p> <p style="padding-left: 40px;">Total Protein & free amino acids / glycogen & glucose/ triglycerides & fatty acid.</p> <p style="padding-left: 40px;">2. Determination of K_m and V_{max} of Na^+-K^+-ATPase/ Acetylcholinestarease.</p> <p>3. Separation of serum Proteins through SDS-PAGE. (demo)</p> <p>4. Fractionation of Lipid moieties through TLC. (demo)</p> <p>5. Titration of an acid with conjugated base.</p>	<p>10 lab hours</p> <p>10 lab hours</p> <p>10 lab hours</p>

	<p>Molecular Biology</p> <ol style="list-style-type: none"> 1. Isolation of Purine/Pyrimidine bases from Nucleic acids and their analysis through spectrophotometer. 2. Separation of Nucleic acids on Agarose gel and relative quantification. 3. Fluorescent In-situ Hybridization using Fluorescent microscopy. 4. Restriction Endonuclease digestion and mapping. 5. m RNA expression studies through PCR <p>Field Work</p> <p>Faunistic survey around 1 km radius of his/ her residence during dawn of every weekend for at least 2 month (8 weeks) using Transect or Quadrangle method of two different fauna. One/ Two day visit to Sanctuary in Goa.</p> <p>* In unavoidable circumstances overnight field work will be replaced by extending the time period (from 8 weeks to 10 weeks of weekend faunistic survey).</p> <p>*Evaluation of the field work component will be based on weekly field note and final compiled field report during SEA.</p>	10 lab hours
Pedagogy:	Practicals/ Mini projects/ Group Activities.	
Learning Outcome:	<p>Practicals will give hands on training on certain areas based on courses on systematics, anatomy, biochemistry and molecular biology.</p> <p>To know the fauna surrounding own's house.</p>	
References /Reading:	As mentioned under individual course ZOC 101, 102, 103 & 104.	