Sant Gadge Baba Amravati University, Amravati

Department of Zoology

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

Course Outcome:

M.Sc. I Semester I:

Paper-I Animal Structure and Function (Non-Chordata)

CO1: Describe different trends in biosystematics.

CO2: Classify invertebrates by using different methods and development of different cladogram and phylogram

CO3: Describe different systems in all phyla of nonchordates

CO4: Describe development of the nonchordate systems according to their evolutionary aspects.

Paper- II Animal Structure and Function (Chordata):

CO1: Describe different types of taxonomic characters and rules and operative principles of International Code of Zoological Nomenclature.

CO2: Describe the endoskeletal system of Chordates.

CO3: Study of different systems throughout the vertebrate series as per their adaptations in different habitat.

CO4: Describe adaptations for vital processes of feeding, flying etc.

Paper- III Gamete Biology:

CO1: Study of the spermatogenesis and oogenesis in eukaryotes.

CO2: Study of different events and their mechanisms during fertilization and consequent changes afterwards.

CO3: Describe assisted reproduction techniques to overcome infertility.

CO4: Describe *Ex vivo* and *In vivo* gene therapy etc.

Paper- IV Genes and Differentiation:

CO1: Describe cell specification and differentiation in whole vertebrate series.

CO2: Study of different body axis formation in Drosophila, Amphibia and Chick

CO3: Study of various methods for contraception.

CO4: Describe Biology of sex determination.

CO5: Study of stem cells, their properties, types markers and disorders etc.

M.Sc. I Semester II

Paper- V Molecular Cell Biology:

CO1: Study of Biomembranes and extracellular matrix.

CO2: Study of various cell surface receptors.

CO3: Study of Cell Signalling and Cell cycle control.

CO4: Describe cytoskeleton in the form of microfilaments and microtubules.

CO5: Study of secretory pathways in eukaryotic cells.

Paper- VI Tools and Techniques in Biology:

CO1: Study of principles and uses of techniques in Biology.

CO2: Study of principles and applications of advanced microscopes.

CO3: Study of microbiological techniques.

CO4: Describe cryotechniques and cryopreservation of cells, tissues and organisms.

CO5: Study of Radioisotope and mass isotope techniques in biology.

Paper- VII Endocrinology:

CO1: Study of histology and histophysiology of different endocrine glands.

CO2: Study of classification of hormones and their actions at cellular as well as genetic level.

CO3: Study of regulation of the processes in organism by hormones.

CO4: Describe synthesis, transport and metabolism of steroid and nonsteroid hormones.

CO5: Study of hormones of different endocrine glands and relative diseases.

CO6: Study of hormone replacement therapy and neuroendocrine mechanisms in different animal.

Paper- VIII Environment and Ecology (Also GIC):

CO1: Study of environment and their biotic and abiotic interactions.

CO2: Describe population ecology in terms of diversity indices along with growth curves, demes and dispersal.

CO3: Study of community ecology, ecological succession, ecosystems.

CO4: Describe environmental pollution and effects on nature, global warming global dimming.

CO5: Study of conservation biology through sanctuaries, National parks, Project Tiger and Biosphere reserves.

CO6: Study of toxicological effects of pesticides and remedial aspects of it.

CO7: Study InterGovernment Poliicy/Protocol for Climate change, Intellectual Property Rights and Environment Impact Assessment Processes.

M.Sc. II Semester III:

Theory Paper-IX (Molecular Cytogenetics-I) and X (Molecular Cytogenetics-II) and Related Practical

CO1: Molecular Cytogenetics gives the knowledge of biological mechanisms of variations and heredity.

CO2: It also gives an elementary idea about different hereditary diseases and syndromes and their inheritance.

CO3: It trains the students to perform laboratory exercises in cytogenetics.

Theory Paper-XI (Molecular Biology-I) and XII (Molecular Biology-II) and Related Practical

CO1: Molecular Biology gives the knowledge of biological processes through the investigation of molecular mechanisms.

CO2: It enables to understand the chemical and molecular processes that occur in and between cells.

CO3: It also provides knowledge about the theoretical processes related to drug development.

CO4: Trains the students to perform laboratory exercises in Molecular Biology that is applicable to medicine, forensics and pharmaceutical industry.

M.Sc. II Semester IV:

Theory Paper-XIII (Biochemistry) and Related Practical

CO1: Biochemistry gives the knowledge of biomolecules and the biochemical processes occurring inside the cell and the body as a whole.

CO2: It trains the students to carry out laboratory exercises in biochemistry and biochemical investigations.

Theory Paper XIV (Enzymology and Biostatistics) and Related Practical

CO1:Enzymology enables to understand the role and activities of various enzymes functioning in the body.

CO2:It also gives some idea about clinical and pharmaceutical applications of enzymes.

CO3: It trains the students to carry out laboratory exercises related to enzyme activity and estimations of enzymes.

CO4:Biostatistics trains the students in handling and analyzing the biological clinical data.

Theory Paper-XV (Molecular Immunology-I) and XVI (Molecular Immunology-II) and Related Practical

CO1: Molecular Immunology gives the knowledge of biological defence processes through the investigation of molecular mechanisms.

CO2: It enables to understand the physiological and molecular mechanisms that occur in the body during host defence to parasitic infections.

CO3: It gives an idea about various aspects of vaccines and their development.

CO4: Trains the students to perform laboratory exercises in Molecular Immunology that is applicable to medicine and pharmaceutical industry.

Program Outcome:

PO1. Knowledge of various branches of Zoology and in particular Molecular Biology for Postgraduate studies is made possible.

PO2 .This higher studies make the student for widening the horizon of knowledge for the sustenance of the stakeholders.

PO3. Awareness and relative action to reduce the hurdles of the lives of people through the steps for reduction of pollution and global warming.

PO4. Students acquainted to the skills in handling the instruments and different techniques through the practicals and developing the scientific temperaments for research.

Program specific Outcomes:

PSO1.Preparation of the checklist and inventories are possible through the identification of the fauna in local areas.

PSO2. Knowledge of the various vital reactions at molecular level which are going in the organisms

PSO3. Knowledge of genetic aspects, genetic traits, diseases and their specific causes.

PSO4. Survey and data analysis of the various kinds of disease in the locality through project work of the students.

PSO5. Understand the various strategies and phenomena related to animal reproduction.

PSO6. Conservation strategies and awareness about environmental threats to reduce and save energy through Wildlife Week Celebration.

PSO7. Analysis of corporation water samples for the investigation of parasitic presence.

PSO8. Investigation of bones for identification of the samples from different animals found at the poaching sites in forest.