

## **Department of Zoology Program Outcomes**

### **Program Specific Outcomes and Course Outcomes of B.Sc. in Zoology Programme**

The Department of Zoology, Government Degree and PG College For Women offers Zoology as a core subject for undergraduate and post graduate courses for students.

#### **Program Outcomes: B. Sc. Zoology**

PO1 - Aware students about knowledge and skill in the fundamentals and systematics of animal kingdom.

PO2 - Gain knowledge of anatomical structure and various metabolic functions of organisms.

PO3 - Understand various physiological processes at molecular level of animals from different phyla.

PO4 - Information and skill of advanced biological techniques for experimental purpose. PO5 - Awareness about environment and its conservation processes, pollution control and its importance and.

PO6 - Gain knowledge of protection of vulnerable and endangered species

PO7 - Information and skill of applied zoology including sericulture, apiculture, fisheries, poultry, vermiculture, agricultural pests and their control etc.

PO8 - Understand about various concepts of genetics and its importance in social wellbeing.

PO9 - Aware students about ethical principles and commit to professional ethics and responsibilities.

PO10 - Apply the knowledge and understanding of Zoology to one's own and social life. PO11

- Gain knowledge of communicable and non-communicable diseases to improve personal and public health.

#### **Program Specific Outcomes: B. Sc. Zoology**

PSO1. Acquire knowledge on the various aspects of life sciences, cell biology, genetics, taxonomy, physiology, applied zoology, general embryology and public health.

PSO2. Understand good laboratory practices and safety, Carry out experimental techniques and methods of Physiology, Cell biology, pathology, Genetics, Applied Zoology, Biological techniques, Sericulture, Biochemistry.

PSO4. Understand the applications of biological sciences in Biotechnology, Apiculture, Poultry, Fisheries, Aquaculture, Agriculture and vermiculture.

PSO5. The students gained the knowledge to use modern sophisticated equipments and tools.

PSO6. Recognize the scientific facts behind natural phenomena.

**Course Outcomes:** B.Sc. Zoology is an undergraduate THREE years Program in Zoology and divided into six semesters. It comprises subjects such Animal Diversity of Invertebrates

&Vertebrates,Animal physiology and Ethology,Cell Biology,Genetics and Developmental Biology,Immunology and Biotechnology ,Tools and Techniques in Biology,Biochemistry ,Ecology,Zoogeography and Evolution.

### **Animal Diversity :**

CO1: The student will be able to understand classify and identify the diversity of animals.

CO2: The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.

CO3: The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

CO4: The student will be able to understand the morphology, habit and habitat. Systematic position and various systems in Invertebrates and Vertebrates.

CO5: The student will be able to understand classify and identify the diversity of animals.

CO6: The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

### **Animal physiology and Ethology :**

CO1: Students will learn about basics of histology and tissue staining.

CO2: They will also understand the physiology of digestion, respiration, circulation, excretion, adaptation. muscles, nerves, reproductive systems and bone.

CO3: They will learn details of endocrinology with classification of hormones, their biosynthesis, receptors, mode of molecular actions, physiological function, feedback controls and related disorders.

CO4:Students will know in details about patterns of behaviours, survival strategies, social and cooperative behaviours, design of signals and chronobiology.

CO5:They will also know to construct ethograms.

### **Cell Biology :**

CO1:Students will understand the structures, positions and functions of plasma membrane and all cellular organelles in details.

CO2:They will acquire knowledge about chromosomes and cell divisions, both mitosis and meiosis.

CO3:They will also know about cell signalling and cancers. They will know how to measure and stain different cell types.

**Genetics :**

CO1:Students will learn the fundamental genetics like Mendelian and Non Mendelian inheritances, linkages, mutations, sex determination of various animals, extrachromosomal inheritances, transposable genetic elements etc.

**Developmental Biology:**

CO1:Students will learn the different aspects of early, late and post embryonic developments.  
CO2:They will have the knowledge about implications of developmental biology in various fields, such as in teratogenesis, stem cell biology, in vitro fertilization, cryopreservation, cord blood transfusion etc.

**Immunology:**

CO1:Students will develop knowledge about structures and function of immune cells, immunoglobulins, antigens and their interactions with antibodies.

CO2:They will know about MHC molecules, cytokines, hyper sensitivity reactions and cellular mode of immunity development.

CO3:They will know the immune diffusion technique and ELISA.

**Biotechnology:**

CO1: Imparts the Knowledge to culture animal cells in artificial media.

CO2:Knowledge of animal cells in culture, growth of cell lines

CO3: Use in recombinant DNA technology, genetic manipulations and in a variety of industrial processes.

**Ecology:**

CO1:Students will be understanding the various features and aspects of population ecology, community ecology and ecosystem ecology.

CO2:They might have the knowledge about environmental biology in details.

CO3: They will acquire knowledge about various tools and techniques of field ecology.

**Evolution:**

CO1:Students will know about population genetics, human evolution, various concepts about origin of species, extinctions, phylogenetic tree making.

**Tools and Techniques in Biology:**

CO1:Students gain knowledge about various tools & techniques used in biological systems and give them insight about their use in research.

**Biochemistry:**

CO1: Students will understand the metabolism of carbohydrates, lipids and proteins in details. They will also learn about oxidative phosphorylation and redox reactions.