Government P. G. College, Berinag

Department of Zoology

Vision

Our vision is to empower students to acquire, demonstrate, articulate and value knowledge and skills that will support them as life long learners.

Mission

Our mission is to ensure that students develop skills and the competences essential for success and leadership. Also, our mission is to skill and empower students to solve the problems in the realms of Zoological Sciences and its allied areas.

Course Outcome (CO) at PG Level

After the completion of this course in Zoology, students will be able to learn:

M.Sc. Zoology	**SEMESTER I**
Paper I	**Microbiology**
CO1	Types and structure of different microbes, their natural habitat, morphology, physiology, growth and culture techniques
CO2	Vaccines and antibiotics production, microbial diseases and bio-hydrometallurgy
CO3	Microbiology of water, soil, air and food
Paper II	**Non-Chordata**
CO1	Salient features and classification of various Lower and Higher

	Non-Chordates
CO2	Life cycle, pathogenecity and control measures of parasites belonging to groups such as Protozoa, Helminths
CO3	Features with reference to habits and habitats, organization, affinities, locomotion, nutrition, excretion, adaptations, reproduction and larval forms of various phyla under Non-Chordates
Paper III	**Ecology**
CO1	Concepts in ecology, its scope and relevance to human welfare, various environmental factors and laws governing life of organisms
CO2	Concepts of habitat, niche, population ecology, community ecology and ecological succession
CO3	Pollution, its causes and control measures, eutrophication
CO4	Biodiversity, its conservation and management strategies
Paper IV	**Taxonomy and Evolutionary Biology**
CO1	Concepts of animal classification, taxonomy, systematics and nomenclature
CO2	Evolutionary biology of animals, concepts and evidences of evolution, variations and speciation
CO3	Concepts in rules of zoological nomenclature, ICZN

CO4	Basic patterns of evolution, mimicry and protective coloration
Paper V	**Molecular Biology**
CO1	Structure and organization of genome, DNA and RNA
CO2	Concepts of DNA replication, repair, mutation, transcription, translation and nucleic acid sequencing
CO3	Fine structure of gene and regulation of gene-expression
M.Sc. Zoology	**SEMESTER II**
Paper I	**Concepts in Cell Biology and Genetics**
CO1	Structure and functions of cell and its organelles, different types of cells, cell division, communication and signalling
CO2	Biology of cancer, chromosomal analysis and mapping
CO3	Concept of gene, Mendelian and Non-Mendelian genetics, Microbial genetics
Paper II	**Mammalian Endocrinology**
CO1	History and scope of endocrinology, environmental and reproductive endocrinology
CO2	Chemical nature, classification, manner of secretion and action of various hormones
CO3	Structure and functions of endocrine glands
Paper III	**Biochemistry**

CO1	Molecular basis of life, molecular properties and bio-energetics
CO2	Classification, structure, sources, functions and metabolism of biologically significant molecules
CO3	Vitamins and basic concept of xenobiotics
Paper IV	**Animal Physiology**
CO1	Concepts of nutrition, digestion, respiration, circulation, excretion, thermoregulation, nervous and immune system, sensory and muscle physiology
M.Sc. Zoology	**SEMESTER III**
Paper I	**Chordata**
CO1	Salient features and classification of various Lower and Higher Chordates
CO2	External morphological differences of poisonous and non-poisonous snakes, Snake venom and anti-venom
CO3	Features with reference to morphology, development, affinities, locomotion, parental care, adaptations of various animals under Chordates
Paper II	**Animal Behavior**
CO1	Different patterns of behavior, individual behavior, feeding strategies and social behavior
CO2	Animal behavior and environment, human and animal welfare

CO3	Communication modes in different animal groups, biological clocks and migratory behavior
Paper III	**Developmental Biology**
CO1	Gametes fertilization, pre and post embryological developments in frog, chick and rabbit
CO2	Concepts of foetal membranes, metamorphosis, teratogenesis, regeneration and ageing
Paper IV	**Biotechnology**
CO1	Biotechnology, its scope and importance
CO2	Various techniques used in the field of Biotechnology, DNA fingerprinting and bio-remediation
CO3	Gene therapy, transplantation biology and stem cell cultures
CO4	Genetic engineering and ethical issues
Paper V	**Bio-Instrumentation, Biostatistics and Computational Biology**
CO1	Principles and applications of various biological techniques such as spectrophotometry, microscopy, PCR, chromatography and electrophoresis
CO2	Concepts of bio-informatics and bio-statistics
M.Sc. Zoology	**SEMESTER IV (Specialization in Entomology)**

Paper I	**Systematics and Applied Entomology**
CO1	Ancestry, evolution, classification and methods of collection, preservation and culture of insects
CO2	Habit, habitats and general characters of various insect orders up to family level
CO3	Principles and practices of pest control, IPM, biology and control of various insect pests, lac culture, apiculture, sericulture and biology of insects of medical importance
Paper II	**Biology of Insects: Morphology, Physiology & Development**
CO1	Structure, functions and modifications of various external and internal body parts
CO2	Physiology and development of insects