DEPARTMENT OF ZOOLOGY – BSc Zoology

(Program outcomes, program specific outcomes and course outcomes for all programs offered by the Department are stated and displayed on website and communicated to teachers and students)

PROGRAM OUTCOMES

 Students acquire knowledge and develop skill over animal sciences, understands the interactions among various living organisms

 Students are able to study animals of different phyla, their distribution and their relationship with the environment

 Students are able to understand internal structure of cell, functions of various cellular organelles.

 Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

 Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.

 Understands the complex evolutionary processes and behavioural pattern of various animals

 Students are able to correlate the physiological and biochemical processes of animals

 Understanding of ecological factors, environmental conservation processes and its importance, pollution control and biodiversity and protection of threatened species

 Gain knowledge about applied fields like sericulture, fisheries, apiculture, poultry and dairy farms along with tissue preparation, molecular and statistical techniques

 Understanding about various concepts of genetics and its importance in human health

 Apply the knowledge and understanding of Zoology to one's own life and work

 Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties

 Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species

 Apply the knowledge and understanding of Zoology to one's own life and work

 Develops empathy and love towards the animals

PROGRAM SPECIFIC OUTCOMES

 Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, ecology and applied Zoology

 Demonstrated a broad understood of animal diversity, including knowledge of the scientific classification and evolutionary relationships of major groups of animals

 Recognized the relationships between structure and functions at different levels of biological organization (e.g., molecules, cells, organs, organisms, populations, and species) for the major groups of animals.

 Analyse the relationships among animals with their ecosystems

 Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, Sericulture, Biochemistry, Fish biology, Animal biotechnology, Immunology and research methodology

 Understand the applications of Zoology in Agriculture, Medicine and daily life or economic Zoology such as sericulture, Apiculture, aquaculture, Industrial microbiology, rDNA technology and medicine for their career opportunities.

 Gains knowledge about research methodologies, effective communication and skills of problem solving methods

 Contributes the knowledge for Nation building, Characterized the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine, host) that animals inhabit. Explained how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments.

COURSE OUTCOMES

Structural Diversity of Non-chordates and Chordates

 Knowledge of classification of Non-chordates along with studies on various physiological functions and interactions of non-chordate organisms with type specimens

 Knowledge of classification of chordates along with studies on various physiological functions and comparative anatomy of organs of chordate with examples

Biochemistry — Cell Biology - Genetics

 Students gain knowledge of different biomolecules and biochemical processes of cells

 Gather basic concepts of Cell Biology along with various cellular functions

 Idea about Mendelian, non-Mendelian inheritance, genetic disorder, gene mutations and sex determination

Histology – Developmental Biology– Endocrinology & Immunology

 Basic concepts of histology of various organs of body

 Basic concepts of developmental biology regarding developmental processes of frog

 Gain knowledge about hormones and endocrine mechanisms

 Imparts knowledge about types of immunity, antigens-antibodies and their properties, vaccines, diseases

Animal Physiology – Molecular Biology – Biotechnology & Biostatistics

 Students are taught the detailed concepts of circulation, respiration, the functioning of nerves of animals

 Basic concepts of Molecular Biology along with functions of DNA and RNA and study of Genetic Engineering

 Students gain knowledge about statistical analysis in biological fields

Ecology – Evolution

 Imparts knowledge to the student regarding various factors of ecology, types of ecosystem, population and community characteristics and dynamics

 Gains knowledge in the areas of animal behavior, wildlife, biodiversity and conservation Biology

 ]Understands processes of fisheries, sericulture, apiculture, poultry, dairy along with crop pest management techniques

 Students gain knowledge about various disease related vectors and their impact on human

Entomology

 Imparts knowledge of beneficial and non-beneficial insects

 Knowledge of how they interact with their environment, other species and humans CO3 Classification of Insects

 Role of insects in spread of diseases

Zoogeography and Animal Behaviour:

 Distribution of fauna in different realms interaction

 Understand Animal behaviour and response of animals to different instincts CO3 Interaction of biota abiota

 Various kinds of Animal adaptations

Immunology

 Provides basics knowledge about immune system and allows the student to create insight as how to improve their immune system and good health.

 Types of immunity, antigens-antibodies and their properties CO3 Complement system, MHC's and immune responses

 Understanding of types of hypersensitivity reactions and auto immune diseases

 Ability to understand concepts of tumor immunology and transplantation immunology

Practical

 Students are able to identify bones, histological sections, embryological stages of chick

 Students performed biochemical and statistical techniques

 Students will gain skill about slide preparation, staining and mounting

 Identifications of non-chordate and chordate specimens (fresh and preserved) along with larval forms and sections

 Identification of zooplanktons and phytoplanktons

 Gain skill about histological slide preparation, staining and mounting

 Students gain skill about determination of pH and quantitative analysis of blood cells

 Students are able to parasites from rectal and fecal contents of animals

 Students are able to collect parasite and pest specimens.

Project

 Make research proposal

 Construct tool of data collection

 Learn fieldwork modalities

 Understand the process of data analysis

 Writing research report