

PROGRAMME OUTCOMES (POs) OF B. Sc. III ZOOLOGY 2026-27

After Successful Completion of the programme the students will be able to:

PO1: Acquire fundamental and advanced knowledge of animal structure, function and evolution.

PO2: Understand comparative anatomy and physiological adaptations in vertebrates.

PO3: Apply biological principles to analyze organ systems and their evolutionary trends.

PO4: Interpret anatomical and physiological data using appropriate biological terminology.

PO5: Relate structure and function of organ systems to survival and adaptation.

PO6: Students will gain fundamental knowledge of Zoology which will help them for PG studies and Research.

PO7: Students will be able to know good laboratory practices and lab safety.

PO8: Apply gene manipulation techniques in animal biotechnology.

PO9: Develop transgenic and cloned animals for pharma and organ production.

PO10: Create advanced methods to improve animal health and productivity. **PO11:** Analyze and classify biological data effectively.

PO12: Summarize data using central tendency and dispersion measures.

PO13: Assess relationships between variables via correlation analysis.

PO14: Apply gene manipulation techniques in animal biotechnology.

PO15: Develop transgenic and cloned animals for pharma and organ production.

PO16: Create advanced methods to improve animal health and productivity.

PO17: Analyze and classify biological data effectively.

PO18: Summarize data using central tendency and dispersion measures.

PO19: Assess relationships between variables via correlation analysis

PROGRAM SPECIFIC OUTCOMES:

PSO-1: Students will be able to explain fundamental concepts of Animal Physiology, Anatomy, Molecular Biology, Developmental Biology, Aquaculture fisheries, Biostatistics, Laboratory Techniques, Sericulture and Pest control etc.

PSO-2: Students will be able to prepare and qualify for competitive examinations

PSO-3: Students will understand good laboratory practices and safety.

PSO-4: Students will develop research-oriented skills.

PROGRAM EDUCATION OUTCOMES:

PEO-1: Students after graduation (Graduates) will possess strong analytical, critical thinking, and problem-solving skills relevant to the areas in Zoology and they will be prepared for careers in various sectors.

PEO-2: Graduates will be able to utilize their Zoological knowledge and skills to address societal needs and challenges include areas like environmental sustainability, healthcare, Animal Husbandry etc.

PEO-3: Graduates will demonstrate a commitment to lifelong learning and professional development, and they will possess strong communication, teamwork, and leadership skills.

PEO-4: Graduates will be equipped to pursue further education, such as an M.Sc. or Ph.D., in Zoology or related disciplines and will be able to work effectively in multidisciplinary and interdisciplinary environments.

PEO-5: Graduates will be equipped to innovate and develop solutions that benefit society.

COURSE OUTCOMES (COS): Major Mandatory Paper-IX-Comparative Anatomy of Vertebrates

Upon successful completion of this course, students will be able to:

CO1: Students will be able to describe the structure and organization of major organ systems in vertebrates.

CO2: Students will be able to explain the functions and physiological significance of different vertebrate organ systems.

CO3: Students will be able to compare organ systems in vertebrates and interpret their evolutionary trends and adaptations.

CO4: Students will be able to apply comparative anatomical knowledge to analyze structure function relationships in vertebrates.

COURSE OUTCOMES (COS): Major Mandatory Paper- X- Molecular Biology & Molecular Diagnostics

The course in molecular biology and molecular diagnostics is aimed at making the students:

CO1: Understand the basic concepts and processes in molecular biology.

CO2: Understanding the molecular methods for medical diagnosis.

CO3: Apply the knowledge in the field of molecular diagnostic.

COURSE OUTCOMES (COS): Paper XI Elective Paper I-A: Animal Biotechnology And Biostatistics.

Upon successful completion of this course, students will be able to:

CO1: Understand restriction enzymes and cloning vectors for gene manipulation.

CO2: Gain skills in gene cloning, transformation and transgenic animal production.

CO3: Recognize gene knockout methods and their importance in model organisms.

CO4: Classify biological data using various statistical techniques.

CO5: Analyze data through tabulation, graphs and statistical measures.

CO6: Evaluate variable relationships using correlation techniques.

COURSE OUTCOMES (COS): Major Elective I (Theory) Paper XI Elective Paper I-B: Aquaculture and Fisheries.

The course in aquaculture and fisheries is aimed at making the students:

CO1: After completing this course, students will gain knowledge of aquaculture and fisheries resources.

CO2: Develop practical skill in fish culture and fish processing.

CO3: Promote entrepreneurship and employment opportunities in aquaculture.

COURSE OUTCOMES (COS): Major Mandatory Paper XII- Developmental Biology.

On successful completion of the course, the students will be able to:

CO1: Identify model organisms used to investigate developmental biology and compare the developmental programs of different organisms.

CO2: Explain the concept of growth and differentiation.

CO3: Compare and contrast spermatogenesis and oogenesis.

CO4: Illustrate general features of development of multicellular organisms and describe morphological processes that transform a fertilized egg into a multicellular organism.

CO5: Analyze different types of eggs and sperms and differentiate early embryonic stages.

CO6: Understand the concept and applications of stem cells.

CO7: Understand various developmental abnormalities.

COURSE OUTCOMES (COS): Major Mandatory Paper- XIII Animal Physiology

After completion of the course, the student will be able to:

CO1: Understand fundamental principles of physiology.

CO2: Explain the mechanisms of digestion, respiration in vertebrates.

CO3: Understand the circulatory system functions and blood physiology.

CO4: Comprehend excretory physiology and mechanisms CO5: Understand the muscular system and conduction of nerve impulse.

CO6: Explain the anatomical location, structure and functions of endocrine glands

CO7: Describe the chemical classification of hormones and their synthesis, secretion, transport and metabolism.

COURSE OUTCOMES (COS): Major Elective Paper XIV: IIA Histology & Immunology

After completion of the course, the student will be able to:

CO1: Identify and describe the microscopic structure of mammalian organs.

CO2: Understand innate and adaptive immunity and explain their mechanisms of action.

CO3: Understand the process of hematopoiesis and the development of immune cells.

CO4: Identify cells and organs of the immune system and explain their functions.

CO5: Describe the structure, classes and biological functions of antibodies.

CO6: Distinguish between humoral and cell-mediated immune responses.

CO7: Understand the structure and types of MHC molecules and their role in immune response.

CO8: Explain antigen processing and presentation pathways.

CO9: Understand cytokines and complement system pathways and their biological significance.

CO10: Analyze the principle, methodology, and applications of ELISA.

CO11: Describe hybridoma technology and production of monoclonal antibodies

COURSE OUTCOMES (COS): Major Elective Paper XIV: II B Bioinformatics

After completion of the course, the student will be able to:

CO1: After completing this course, students will gain fundamental bioinformatics skills.

CO2: Download and visualize DNA and protein structures.

CO3: Perform sequence comparisons using BLAST.

CO4: Navigate biological databases effectively.

CO5: Calculate genetic distances from alignments.

CO6: Interpret protein structures and phylogenetic trees.

COURSE OUTCOMES (COS): Indian Knowledge System– II Zoological Concepts in Ancient Indian Culture Theory:

CO1: Students will be able to describe the historical development of zoological knowledge in India from ancient to colonial periods.

CO2: Students will be able to explain traditional Indian practices related to animal conservation, classification, husbandry, and veterinary medicine.

CO3: Students will be able to analyze the scientific, cultural, and ethical significance of ancient Indian zoological and veterinary knowledge in the context of modern biology.