Vision

Establish the identity as a Department of academic excellence,a strong research centre and service to society

Mission

- To contribute to society through the pursuit of learning and research
- To enhance the students logical and analytical skills
- To encourage students to indulge in perpetual learning
- To enhance employability prospects of the students
- To teach techniques of fish farming to the students

Programme Outcomes B.Sc. Zoology (BZO)

Program Specific Outcomes

B.Sc. Zoology (BZO)

PSO1 To understand the principles of taxonomy, cellular and molecular biology, genetics, ecology and evolution.

PSO2 To develop insight and improve their analytical communication and professionalskills.

PSO3 To understand the applications of zoological sciences in Biotechnology,Apiculture, Poultry, Fisheries, Aquaculture, Agriculture and vermiculture.

PSO4 To gained the knowledge to use modern sophisticated equipment and tools.

Course Outcomes of B. Sc. Zoology

B. Sc. Part –I Paper – I: (BZO01)

Course Name: Cell Biology and Invertebrates

CO1 To explain the importance of cell as a structural and functional unit of life and compares between prokaryotic and eukaryotic system.

CO2 To understand the structure and function of different cell organelles with cell division and understand the general idea about cellular immunity and cell transformation.

CO3 To explain the importance of classification of invertebrate animals and classifiesthem effectively using the six levels of classification.

CO4 To understand the Systematic position, habit and habitat, morphology and various systems in type animals from each phylum of invertebrate.

CO5 To comprehend and analyze the adaptive changes that have occurred in invertebrates.

Paper – II: (BZO02)

Course Name: Vertebrates and Embryology

CO1 To explain the importance of classification of vertebrate animals and classifiesthem effectively using the six levels of classification.

CO2 To understand the Systematic position, habit and habitat, morphology and various systems in type animals from each phylum of vertebrate.

CO3 To comprehend and analyze the adaptive changes that have occurred invertebrates.

CO4 To understand the principles and process of gametogenesis, fertilization and cleavage.

CO5 To know the process of differentiation and organogenesis, development of extra embryonic membrane and placenta in mammals.

B. Sc. Part –I, (BZOL01)

Lab Course 01

CO1 To understand the structure and function of different cell organelles with cell division and understand the general idea about cellular immunity and cell transformation.

CO2 To explain the importance of classification of invertebrate animals and classifies them effectively using the six levels of classification.

CO3 Recognize the importance of conservation.

B. Sc. Part –II Paper–I: (BZO03)

Course Name: Vertebrate Anatomy and Physiology

CO1 To know the comparative structure of integument, alimentary canal and respiratory organs in vertebrates.

CO2 To learn the comparative anatomy of endoskeleton, circulatory system and urinogenital system in vertebrates.

CO3 To understand the structure and evolution of nervous system, ear, eye and genital organs in vertebrates.

CO4 To explain the physiology digestion, cardiac cycle, blood coagulation and respiration.

CO5 To comprehend the physiological mechanism of excretion and osmoregulation, muscle contraction, nerve impulse and synaptic transmission.

Paper–II: (BZO04)

Course Name: Vertebrate Endocrinology, Reproductive Biology, Evolution,Behaviour and Applied Zoology

CO1 To understand the hormonal regulation in physiological processes of vertebrates.

CO2 To appreciate the basic concepts of hormonal regulation of reproduction invertebrates.

CO3 To explain the environmental influence and ecological aspects of behavior.

CO4 To comprehend the animal behavior and response of animals to different instincts.

CO5 To understand the scope of aquaculture.

B. Sc. Part –II, (BZOL02)

Lab Course 02

CO1 To understand the hormonal regulation of physiological processes in vertebrates.

CO2 To explain the comparative anatomy of various organ systems of vertebrates.

CO3 To understand the environmental influence and ecological aspects of behavior.

CO4 To understand the scope of aquaculture.

B. Sc. Part –III, Paper I: (BZO05)

Course Name: Ecology, Environmental Biology, Toxicology, Microbiology and Medical Zoology (BZO05)

CO1 To understand the basic theories and principles of ecology, ecosystems and their functioning.

CO2 To explain the conservation practices and assessment of environmental impacts.

CO3 To be aware of toxicants, their impacts on environment and remedial measures.

CO4 To understand the microbial world, its structure and function and to familiarizewith the applied aspects of microbiology.

CO5 To make themselves aware of the pathogens, health related problems, their origin and treatment.

Paper–II: (BZO06)

Course Name: Genetics, Cell Physiology, Biochemistry, Biotechnology and Biotechniques

CO1 To get an in-depth understanding of human genetics and genetic disorders.

CO2 To know the mechanism of transport across membrane, active transport in mitochondria and chemical nature and activation of hydrolytic enzymes.

CO3 To understand the basic structure of carbohydrate, protein and lipids.

CO4 To develop critical thinking, skill and research aptitude in the frontier areas ofthe biochemistry and biotechnology.

CO5 To understand the basic principle and applications of analytical and separation techniques.

B. Sc. Part –III

Lab Course 03 (BZOL03)

CO1 To develop critical thinking, skill and research aptitude in the frontier areas ofthe biochemistry and biotechnology.

CO2 To understand the basic principle and applications of analytical and separation techniques.

CO3 To develop the hands-on skill in biotechniques.

CO4 To understand the basic theories and principles of ecology, ecosystems and their functioning.

CO5 To explain the applied aspects of microbiology and medical zoology.

Programme Outcomes M. Sc. Zoology (MZO)

Program Specific Outcomes M.Sc. Zoology (MZO)

PSO1 To comprehend knowledge of biology in a diversity of organisms encompassing different ecosystem levels and acquire critical analytical skills on different scientific arenas such as immunology, endocrinology, microbiology and genetics.

PSO2 To develop practical skills and ability to perform experiments and analysis through appropriate application of statistical tools and technologies to obtain accurate results and be proficient at critical thinking, annotation and communication of scientific information.

PSO3 To develop cognitive and hands-on skills in advanced scientific tools and techniques and their uses in applied and advanced zoological sciences.

PSO4 To connect, comprehend and apply the value of the diversity and complexity of animal life as revealed through studies on morphology, physiology, cellular and molecular biology and biochemistry.

Course Outcomes of M. Sc. Zoology

Semester - I, Paper-I: (MZO101)

Course Name: Biosystematics and Taxonomy

CO1 To understand the relevance of Biosystematics and its importance in resolving classical and applied research problems.

CO2 To understand the importance and applications of various species concepts and speciation in systematics; they will also be able to understand the merits and demerits of various schools of biological classification.

CO3 To versed with the collection and identification techniques and use of various tools in taxonomy as well as learn to use taxonomic keys as a cognitive aid.

CO4 To acquire an in-depth knowledge on the field of diversity and relationship in the animal world and to appreciate the concept of biological conservation techniques.

Semester - I, Paper – II: (MZO102)

Course Name: Structure and Functions in Invertebrates

CO1 To understand the development of organisms through presence or absence of coelomic cavity and describe different types of evolutionary development along with and account of locomotion.

CO2 To explain the types of nutrition and digestive system and structure, function and mechanisms of respiration and excretion of the organisms.

CO3 To appreciate the advanced nervous coordination in higher phyla ofinvertebrates.

CO4 To acquire knowledge about life cycle, larval forms of invertebrates andunderstand the significance of minor phyla.

Semester - I, Paper–III: (MZO103)

Course Name: Endocrinology

CO1 To gain knowledge of the distribution, morphology/anatomy of endocrine glands and their role in chemical integration. Phyletic distribution of the hormones will be understood

CO2 To understand the role of chemical messengers in cellular communication and signaling pathways.

CO3 To gain informations about biosynthesis of various hormones and understand the metabolic disorders concerns with them.

CO4 To appreciate the link between nervous and endocrine system and their role in various life supporting mechanisms.

Semester - I, Paper–IV: (MZO104)

Course Name: Cell and Molecular Biology

CO1 To understand the key concepts of biology at physiological, biochemical, molecular and cellular level.

CO2 To imparts knowledge about structural and functional organization of a typical prokaryotic and eukaryotic cell structures and evolution of eukaryotic cell.

CO3 To understand about cell regulatory mechanisms and key concepts about signal transduction mechanisms.

CO4 To identify link between genetics and cancer with emphasis on oncogenes, tumor suppressor genes, apoptosis, metastasis and relation of cell cycle to cancer.

Semester - I, MZOL01

Course Name: Lab Course-01

CO1 To understand the key concepts of fresh water invertebrates with their identification and conservation methods.

CO2 To imparts knowledge about quantitative estimation of invertebrate organisms.

CO3 To acquire skills in explaining the structural and functional features ofinvertebrate life forms.

CO4 To recognize the importance of conservation of animals.

Semester - I, MZOL02

Course Name: Lab Course-02

CO1 To understand the histological characteristics of various endocrine glands of vertebrates.

CO2 To acquire skills in preparation of Permanent slides.

CO3 To impart knowledge about hormone assay and alternative methods of dissection of vertebrates.

CO4 To gain command on the cytological experiments.

Semester - II, Paper–I: (MZO201)

Course Name: Population Genetics and Evolution

CO1 To gain command on genetic structure and phenotypic variation in natural population and quantify different genetic problems.

CO2 To explain the evolutionary concepts and theories, significance of molecular clock Hardy- Weinberg Law and understand the basic concepts and theories of Lamarck and Darwin.

CO3 To comprehend concepts like modern synthetic evolution while appreciating evolutionary laws of natural selection, genetic drift, migration and meiotic drive.

CO4 To explain the significance of molecular record in evidence for evolution. Understood the Human and horse origin and evolution.

Semester - II, Paper–II: (MZO202)

Course Name: Reproductive Biology

CO1 To understand the fundamentals of gametogenesis.

CO2 To gain in-depth knowledge on female hormonal coordination and control during milestone events of the ovarian cycle from menarch to menopause with biochemistry of fertilization.

CO3 To explain the basic concepts of post fertilization and organogenesis inmammals

CO4 To understand the stages of implantation, establishment of placenta and process of metamorphosis.

Semester - II, Paper–III: (MZO203)

Course Name: Tools and Techniques in Biology

CO1 To acquaint with techniques of sterilization, cell culture and cryopreservation as well as understand the basic concept and application of remote sensing and GIS technology.

CO2 To understand the basic principle and uses of analytical instruments like pH meter, centrifuge and working principle of Geiger Muller radioactivity counter.

CO3 To explain the concepts of light and electron microscopy and immunological techniques.

CO4 To gain the skills to perform various separation techniques of chromatography and gel electrophoresis.

Semester - II, Paper–IV: (MZO204)

Course Name: Environmental Physiology

CO1 To understand the concept of adaptation and acclimatization.

CO2 To explain adaptive radiation in different aspects of terrain.

CO3 To know the role of hormones during stress and homeostasis.

CO4 To corelate the role of body size of organisms and effect of yoga and meditation on human physiology and understand the life processes at various environmental condition.

Semester - II, MZOL03

Course Name: Lab Course-03

CO1 To explain the genetic structure and phenotypic variation in natural population.

CO2 To comprehend the basic concepts of reproductive biology through hands-on experiments and understand the basic concepts of post fertilization and organogenesis in mammals.

CO3 To explain the evolutionary concepts and theories.

CO4 To develop skill of microtome technique.

Semester - II, MZOL04

Course Name: Lab Course-04

CO1 To acquaint with techniques of sterilization, cell culture and cryopreservation as well as understand the basic concept and application of remote sensing and GIS technology.

CO2 To acquire skills on demonstration of analytical instruments like pH meter, centrifuge, colorimeter and Spectrophotometer.

CO3 To explain the concepts of light and electron microscopy and immunological techniques.

CO4 To efficiently work with various separation techniques of chromatography and gel electrophoresis.

Semester - III, Paper–I: (MZO301)

Course Name: Comparative Anatomy of Vertebrates

CO1 To conceptualize the origin, diversity and evolution of vertebrates.

CO2 To understand the comparative account of skin derivatives and skeletal system of vertebrates.

CO3 To explain the evolution of heart and make comparison of circulatory andrespiratory organs of vertebrates.

CO4 To understand the comparative account of sense organs and urino-genitalsystems of vertebrates.

Semester - III, Paper – II: (MZO302)

Course Name: Biostatistics

CO1 To understand the application of biostatistics, Data Classification and Graphical presentation of frequency distribution.

CO2 To gains knowledge about statistical methods like measures of central tendencies, dispersion like Computation of arithmetic mean, mode and median, Standard Deviation, Standard error of mean and student's 't' test and Chi-square test.

CO3 To understand the hypothesis testing and inferential statistics.

CO4 To understand the advanced methods of data validation like ANOVA, Probability, correlation and regression by problem-solving methods.

Semester - III, Paper–III: (MZO303)

Course Name: Ichthyology

CO1 To gain knowledge in the areas of distribution, characterization and classification of Ostracoderms, chondricthys, Teleost and holocephali.

CO2 To explain the integumentary system, locomotion, skeletal and digestive system.

CO3 To understand the respiratory, blood vascular and excretory system.

CO4 To understand the nervous system and sense organs and reproductive system.

Semester - III, Paper–IV: (MZO304)

Course Name: Animal Behaviour

CO1 To explain neural and hormonal control of animal behavior.

CO2 To understand the environmental influence and ecological aspects of behavior.

CO3 To gain knowledge on social and reproductive behavior and response of animals to different instincts.

CO4 To explain the concept of biological rhythm and Insight and cognition learning.

Semester - III, MZOL05

Course Name: Lab Course-05

CO1 To understand the key concepts of vertebrates with their identification andconservation methods.

CO2 To acquire skills in explaining the structural and functional features ofinvertebrate life forms.

CO3 To acquire skill to apply the biostatistics for data analysis in their research projects.

CO4 To understand the advanced methods of data validation like ANOVA, Probability, correlation and regression by problem-solving methods.

Semester - III , MZOL06

Course Name: Lab Course-06

CO1 To understand the histological characteristics of various vertebrate animals.

CO2 To acquire skills in preparation of Permanent slides.

CO3 To understand the osteology of vertebrates/fishes

CO4 To gain command on experiments based on animal behaviour.

Semester - IV, Paper–I: (MZO401)

Course name: Insect Biology

CO1 To receive an understanding of general characters, structure and physiology of insects.

CO2 To gain knowledge about beneficial and non-beneficial insects.

CO3 To learn the skills of identification, seasonal history, biology, nature of damage and control measures of pests.

CO4 To understand the methods to effectively eliminate harmful insects by mode of action of chemical or biological insecticide.

Semester - IV, Paper–II: (MZO402)

Course Name: Animal Physiology

CO1 To learn the physiology of digestive and respiratory system of human beings.

CO2 To understood the blood composition, types, groups and circulatory system.

CO3 To described the physiology of excretory system and nervous system of human beings.

CO4 To know the physiology of sense organs, muscles and reproductive system.

Semester - IV, Paper–III: (MZO403)

Course Name: Population Ecology

CO1 To understand the characteristics of population.

CO2 To explain the concept of dispersal, regulation of population size and age distribution of population.

CO3 To comprehend the coexistence and interactions among different species.

CO4 To make aware and responsible for surrounding nature.

Semester - IV, Paper–IV: (MZO404A)

Course Name: Fisheries and Aquaculture

CO1 To learn the scope of Inland fisheries and use of nets and gears in fish capture.

CO2 To understand the Composite Fish Culture and Integrated fish farming technology and also the utility of different farming systems for sustainable fish culture.

CO3 To gain knowledge of ornamental or aquarium fish breeding.

CO4 To explain the preservation techniques for fishes and disease control measures.

Semester - IV, Paper–IV: (MZO404B)

Course Name: Parasitology

CO1 To understand about the mode of transmission of parasites and theirinterrelationship with host.

CO2 To know about the viral diseases and their treatments.

CO3 To understand the medical and veterinary important insect vectors and their control.

CO4 To gain knowledge about diseases caused by protozoans and helminths.

Semester - IV, Paper–IV: (MZO404C)

Course Name: Economic Zoology

CO1 To cultivate skills to understand vermiculture.

CO2 To learn the techniques of apiculture and prawn culture.

CO3 To develop technical skills on culture, rearing, harvesting and marketing

management.

CO4 To gain knowledge about poultry management.

Semester - IV, MZOL07

Course Name: Lab Course-07

CO1 To explain the preservation techniques for fishes and disease control measures.

CO2 To cultivate skills to understand vermiculture.

CO3 To learn the techniques of apiculture, prawn culture and poultry management.

CO4 To develop technical skills on culture, rearing, harvesting and marketing management.

Program Specific Outcome (PSO): Ph.D. Zoology (PZO)

PSO1 To give comprehensive understanding about research methodology.

PSO2 To acquire knowledge to use modern sophisticated equipments and tools and techniques used worldwide in the field of zoology.

PSO3 To develop insight and improve their analytical and communication skills of quantitative data.

PSO4 To understand the applications of computer in the field of research.

Course Outcomes Ph.D. Zoology (PZO)

Course Name: Research Methodology, Tools and Techniques, Biostatistics and Computer Applications

CO1 To understand the research methodology.

CO2 To use modern sophisticated equipment and tools and techniques usedworldwide in the field of zoology.

CO3 To acquire an in-depth knowledge on the field of Biostatistics, data analysis and communication.

CO4 To understand the basic of computer and its applications in the field of research.

Course Outcomes

Value Added Course Zoology (VZO01)

Course Name: Laboratory Ethics and Lab. Safety

CO1 To acquire knowledge about laboratory safety rules.

CO2 To understand the laboratory ethics.

CO3 To develop skill of maintaining a safe laboratory.

CO4 To develop a safe working environment in laboratory.

Value Added Course Zoology (VZO02)

Course Name: Vermicomposting

CO1 To cultivate skills to understand vermiculture.

CO2 To learn the techniques of composting in a limited space.

CO3 To develop technical skills on harvesting and management of vermicopost.

CO4 To understand the scope of vermicoposting as entrepreneurship.

Value Added Course Zoology (VZO03)

Course Name: Bee Keeping and Honey Processing

CO1 To learn the techniques of apiculture.

CO2 To acquire an in-depth knowledge on different bee species with their specifichost plant.

CO3 To cultivate skills to understand culture, rearing, harvesting and marketing management.

CO4 To acquire knowledge about Honey processing.

Semester - IV, Paper–IV: (MZO404D)

Course Name: Sericulture

CO1 To understand the different kinds of silk

CO2 To learn the techniques of cultivation of Mulberry

CO3 To gain knowledge about cocoon harvesting technology

CO4 To develop technical skills on culture, rearing, harvesting and marketing management