DEPARTMENT OF ZOOLOGY
COURSE OUTCOMES

COURSE 1: ANIMAL DIVERSITY BIOLOGY OF INVERTEBRATES

COURSE OUTCOMES: By the completion of the course, the graduate should be able to

- Describe general taxonomic rules on animal classification
- Classify Protozoa to Coelenterate with taxonomic keys.
- Classify Phylum Platyhelminths to Annelida phylum using examples from parasitic adaptation and vermicomposting.
- Describe Phylum Arthropoda to Mollusca using examples and the importance of insects and Molluscans.
- Describe Echinodermata to Hemichordate with suitable examples and larval stages in relation to the phylogeny.

COURSE 2: ANIMAL DIVERSITY – BIOLOGY OF CHORDATES

COURSE OUTCOMES: By the completion of the course the graduate should be able to –

- Describe general taxonomic rules on animal classification of chordates.
- Classify Protochordata to Mammalia with taxonomic keys.
- Understand Mammals with specific structural adaptations
- Understand the significance of dentition and evolutionary significance.
- Understand the origin and evolutionary relationship of different phyla from Prochordata to Mammalia.

COURSE 3: CELL BIOLOGY, GENETICS, MOLECULAR BIOLOGY AND EVOLUTION

COURSE OUTCOMES: This course will provide students with deep knowledge in Cell Biology, Genetics, Molecular biology and Evolution and by the completion of the course the graduate shall able to-

- To understand the basic unit of living organisms and to differentiate the organisms by their cell structure.
- Describe the fine structure and function of the plasma membrane and different cell organelles of a eukaryotic cell.
- To understand the history of the origin of a branch of genetics and gain knowledge on heredity, the interaction of genes, and various types of inheritance patterns existing in animals.
- Acquiring in-depth knowledge of various aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various disorders
- Understand the central dogma of molecular biology and the flow of genetic information from DNA to proteins.

- Understand the principles and forces of the evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of society

COURSE 4: ANIMAL PHYSIOLOGY, CELLULAR METABOLISM AND EMBRYOLOGY

COURSE OUTCOMES: This course will provide students with deep knowledge of Physiology, Cellular metabolism and Molecular Biology and by the completion of the course the graduate shall able to

- Understand the functions of important animal physiological systems including digestion, cardio-respiratory and renal systems.
- Understand the muscular system and the neuro-endocrine regulation of animal growth, development and metabolism with special knowledge of hormonal control of human reproduction.
- Describe the structure, classification and chemistry of biomolecules and enzymes responsible for the sustenance of life in living organisms.
- Develop a broad understanding of the basic metabolic activities pertaining to the catabolism and anabolism of various biomolecules
- Describe the key events in early embryonic development, starting from gametes to gastrulation and forming primary germ layers.

COURSE-5: IMMUNOLOGY AND ANIMAL BIOTECHNOLOGY

COURSE OUTCOMES: This course will provide students with deep knowledge of immunology, genetics, embryology and ecology and by the completion of the course the graduate shall able to –

- To get knowledge of the organs of the f Immune system, types of immunity, cells and organs of immunity.
- To describe the immunological response as to how it is triggered (antigens) and regulated (antibodies).
- Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering.
- Get familiar with the tools and techniques of animal biotechnology.

COURSE-6: ANIMAL HUSBANDRY

COURSE OUTCOMES: At the end of the course, students will be able to-

- To get knowledge of the principles of animal sciences including genetics, nutrition, reproduction and physiology.
- understand animal husbandry and handling techniques to effectively interact with animals and humane manner.
- Communicate effectively both written and orally and interpret scientific sources and data.

- Get familiar with the techniques of animal husbandry.

COURSE-7: PRINCIPLES OF AQUACULTURE

COURSE OUTCOMES: At the end of the course, students will be able to:

- To know the present status of aquaculture and its role in the world economy and food production
- To understand the pond ecosystems and natural food production.
- To improve the technical knowledge on preparation and management of fish and shrimp ponds.
- To gain knowledge on the estimation of different parameters in culture ponds for better aquaculture practices
- To gain knowledge on harmful algal blooms and their control. To improve the technical skills in soil and water analysis for better aquaculture practice.

COURSE-8: AQUACULTURE MANAGEMENT

COURSE OUTCOMES: At the end of the course, students will be able to

- Acquire knowledge of the culture of Freshwater Fishes and prawns.
- Describe the culturable characteristics of fishes and Prawns.
- Demonstrate the different breeding techniques.
- Investigate and apply hatchery technology for better management practices.
- Explain the various feed formulations for better unrationing.
- Understand the nutritional requirements of finfishes and shellfishes under cultural conditions.
- Estimate water quality; evaluate nutrition in Aquafarming.
- Apply the knowledge on microbial infection, disease diagnosis and control measures.
- Analyse market demand for aquaculture products by conducting consumer surveys

COURSE-9: POST HARVESTING TECHNOLOGY

COURSE OUTCOMES: At the end of the course, students will be able to

- Describe spoilage-causing microorganisms of fish and fishery products
- Understand the freezing technology and canning of fish
- Understand the curing and drying of fish
- Understand the value-added fish products and Fishery By-products
- Understand the Packaging of fish products
- Understand the biological hazards in seafood
- Understand the Hazard analysis and critical control points in the seafood industry
- Understand the National and international standards for fish and fish products