DEPARTMENT OF ZOOLOGY

Programme outcome

This branch of science enables a huge opportunity regarding the knowledge of:

1. The economic importance of invertebrates, vertebrates, diversity of different animals.
2. Micro preparation of cells, tissues and different organs of animals.
3. About the knowledge of different diseases, pathogens, prevention and control of different diseases.
4. Different physiological activity and comparative anatomy of animals.
5. Biochemical aspects, metabolic process, cellular activities of different animal cells.
6. Understanding the molecular biological process, embryological development, evolutionary process and defense mechanism of the body.
7. Applications of biotechnology in animal, human welfare and IPR, biosafety, biopiracy, bioterrorism and bioethics.
8. Study of medical science, paramedical science, bio-technology, human biology, and researches in all such fields.

Programme specific outcome

In this programme students know about:

1. Basics and importance of vertebrates and invertebrates.
2. Genetic mutation and variation of animals.
3. Knowledge on different types of animals with their and pathological and non-pathological activities.
4. The basics of cell and its components.
5. Development an understanding of evolutionary process of animal life and principles of genetics.
6. Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of physiology, molecular biology, developmental biology and endocrinology.
7. Examine the internal anatomy of human systems and organs
8. To diagnose viral, bacterial, fungal and helminthes.
9. Understand core concepts of economic zoology and relate with environment, populations, communities, ecosystems and biostatistical applications.
10. Have conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage.
11. Examine the structure, function and replication of DNA.
12. Analysis of the structures and chemical properties of proteins, carbohydrates, lipids, DNA and RNA through various historic experiments.
13. To gain the knowledge of human biology and other animals.

14. Students will acquire communication, soft skill, social awareness and entrepreneurship skill.
15. It aims for work within the fields of research, public administration, governmental and non-governmental organizations, education and industry.

Semester-I

Core -1 (Diversity and Evolution of Non-Chordates)

Course Outcome

1. Provide knowledge about different kinds of invertebrates.
2. Provide knowledge about gradual complexity in the body organization.
3. Differentiation of unicellular and multicellular animals.
4. Structural peculiarities of different non-chordates.
5. Provide knowledge of significance of non-chordate organisms.

Core- 2 (Principles of Ecology and biostatistics)

Course Outcome

1. Ecosystem, food chain, food web, energy flow, ecological pyramids.
2. Basic concepts of population.
3. Provide knowledge about characters of community, diversity and species richness.
4. Support the students to enhance their knowledge about nutrient and biogeochemical cycles.
5. Provide knowledge for conservation of biodiversity.
6. It provides the basic knowledge of biostatistical calculation and application with analysis.

Semester-II

Core- 3 (Diversity and Evolution of Non-Chordates)

Course outcome

1. The students will study different types of non-chordates like Annelida, Arthropoda, Onychophora, Mollusca and Echinodermata.
2. They will study their classification along with ecology and life cycle.
3. Role of Onychophora in evolutionary significance.
4. It provides the types of coelom and metamerism in Annelida.
5. Give idea about the respiratory system of Mollusca and the special feature of Echinodermata.

Core- 4 (Physiology : Life Sustaining System)

Course Outcome

1. It is an important core for the students which provide the firm knowledge about human physiology.
2. It is easy to understand the process and mechanism of digestion.
3. To increase the basic knowledge of respiration and its system.
4. Provide knowledge about the physiological knowledge of excretion and regulation of acid-base balance.
5. Provide knowledge about composition, coagulation and disorder of blood.
6. This core gives elaborate knowledge about the structure, function, disorder and regulation of heart.

Core- 5 (Diversity and Distribution of Chordata)

Course Outcome

1. Knowledge of protochordates and their origin.
2. Information about structural peculiarities of various protochordates.
3. Gaining knowledge of Petromyzon and Myxine.
4. It supports to increase the knowledge of fishes and amphibia.
5. It makes to understand the migration of birds and different adaptations in reptiles.
6. It provides information to increase the knowledge about mammals and zoogeographical distribution of animals.

Semester-III

Core- 6 (Physiology: Control and Coordination)

Course outcome

1. In acquiring knowledge about functions of different parts of our body.
2. In gaining knowledge about different types of animal tissues, their location, structure and functions.
3. Understanding about the detail mechanism of transmission of nerve impulse through the nerve cell.
4. Information about mechanism of muscle contraction.
5. It provides detailed knowledge about the reproductive system of humans.
6. Knowledge about various glands present in our body.

Core - 7 (Comparative Anatomy of Vertebrates)

Course Outcome

1. It provides knowledge to study the integumentary and skeletal system of vertebrates.
2. It gives a clear cut idea about the gills, lungs, air sacs and alimentary system of vertebrates.
3. It provides knowledge about general plan of circulation and evolution of heart.
4. Evolution of kidney, genital system and types of mammalian uteri is clearly understood.
5. Sense organs and the nervous system is clearly understood from this core.

Semester-IV

Core- 8 (Biochemistry of Metabolic Processes)

Course Outcome

1. It gives information about the biomolecules.
2. Learning of carbohydrate metabolism.
3. Provides knowledge about protein metabolism.
4. Provides knowledge about lipid metabolism.
5. Provides knowledge to increase mechanism of enzyme action, respiratory chain, enzyme kinetics and oxidative phosphorylation.

Core- 9 (Cell Biology)

Course Outcome

1. Knowledge of prokaryotes and eukaryotes, mycoplasma, virus, prions etc.
2. Transport across cell membrane, cell junctions, and structure and function of ER, mitochondria.
3. Knowledge of cytoskeleton, aging and nucleus.
4. Process of cell death clearly understood.
5. Provides knowledge of cell cycle.
6. Information about cell signaling.

Core- 10 (Principles of Genetics)

Course Outcome

1. Learn the methods of Mendelian principles.
2. Knowledge of linkage and crossing over.

3. Provide knowledge about the chromosomal and gene mutation.
4. Information about quantitative genetics and sex determination process.
5. Provide knowledge about extra chromosomal inheritance and antibiotic resistance.

Semester-V

Core- 11 (Developmental Biology)

Course Outcome

1. Support to increase the concept of cell-cell interaction and gene expression.
2. Provide knowledge about gametogenesis, cleavage and fate map.
3. Gives information about implantation of the embryo and placenta.
4. Provide knowledge of hormonal regulation in post embryonic development.
5. Process and cause of teratogenesis.
6. Gives an idea about stem cell culture and amniocentesis.

Core- 12 (Molecular Biology)

Course Outcome

1. It provides detail knowledge of DNA structure and replication.
2. Give information about translation and transcription process.
3. Provide knowledge of split gene, splicing mechanism etc.
4. Acquiring knowledge about gene regulation.
5. Support to increase the knowledge of lack operon, trip-operon.

Semester-VI

Core- 13 (Immunology)

Course Outcome

1. Provide great opportunity to know historical background of immunology.
2. Provide information about antigen structure, types and function of antigen.
3. Provide information about antibody structure, types and function of antibody.
4. The knowledge of histocompatibility.
5. The knowledge of hypersensitivity.

Core - 14 (Evolutionary Biology)

Course Outcome

1. It provide an idea about history of life
2. Provide information about evidences of evolution.
3. To learn about isolation mechanism, natural selection with sexual and artificial selection.
4. It supports to increase the knowledge of population genetics.
5. Information about species concept.

DSE- 1 (Animal Behavior)

Course Outcome

1. Provide knowledge about mechanism of behavior.
2. It gives an idea about reflex action, reflex path etc.
3. Provide knowledge about the social behavior of animals.
4. Sexual behavior of the animals is clearly understood.
5. Learn about biological clock.

DSE- 2 (Economic Zoology)

Course Outcome

1. Knowledge about bee-keeping and bee-economy.
2. It provides knowledge about rearing of silkworm and importance of silkworm.
3. It gives information about fish management, breeding, nursing and stocking.
4. Information about aquaculture like prawn farming and pearl culture.
5. Provide idea about dairy and poultry farming to increase the economic condition.

DSE- 3 (Microbiology)

Course Outcome

1. Scope and importance of microbiology.
2. Knowledge of gram positive and gram negative bacteria.
3. Provide knowledge of bacterial classification.
4. Knowledge of economic importance of fungi and Protista.
5. Structure of virus and different bacterial, viral, fungal and protozoan disease.
6. It provides knowledge about the interaction of immuno response and antibiotics.

DSE- 4 (project)

Course Outcome

1. To select the topic.
2. Literature survey for the topic of the project.
3. Skill in practical work, experiments, use of biological tool and techniques.
4. Handle instruments for analysis and discuss their experimental results.
5. To prepare project reports and present it using power point presentation.
6. Work within a small team to achieve a common research goal.