Zoology at UG level

Programme Specific Outcomes:

The student learner can-

1. Identify the major groups of organisms with an emphasis on animals and classify them within a phylogenetic framework.
2. Compare and contrast the characteristics of animals that differentiate them from other forms of life.
3. Understand the basic concepts in cell and its components which are used to generate and utilize energy besides the development of various animals.
4. Distinguish the anatomy of various animals and understand the physiological process.
5. Explain the ecological interconnectedness of life on earth by tracing energy and nutrient flows through the environment.
6. Apply fundamental statistical tools and physical principles (physics, chemistry) to the analysis of relevant biological situations.
7. Synthesize information from the biological literature and its effective communication in writing.
8. Demonstrate a broad animal diversity, including knowledge of the scientific classification and evolutionary relationships of major groups of animals.
9. 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.
10. Characterize the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine, host) that animals inhabit. Learners can explain how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments.
11. Explaine how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system. With this knowledge, students can give specific examples of the physiological adaptations, development, reproduction and behavior of different forms of life.

12. Understand the applied biological sciences or economic Zoology such as sericulture, Apiculture, Aquaculture, Industrial Microbiology, DNA technology and medicine for their career opportunities.

Course outcomes:

This course can make students-

CO1. To know the basic concept of biosystematics and procedure in taxonomy.

CO2 To describe the general biology of few selected non-chordates useful to mankind.

CO3. To appreciate the process of evolution (unicellular cells to complex, multicellular organisms)

CO4. To identify the invertebrates and classify them up to the class level with the basis of systematic

CO5. To understand the basis of life processes in the non-chordates and recognize the economically important invertebrate fauna.

CO6. To bring out the structure and basic components of Prokaryotic, Eukaryotic cells, cellular components generating energy in the cells.

CO7. To distinguish species, population, communities, ecosystem, biomes, habitat, Niche, symbiosis, factors affecting population size, density, distribution and dynamics.

CO8. To develop industrial processes for production of antibiotics, enzymes, techniques for tissue culture, cell culture and organ transplantation, biological process of plant disease control.

CO9. To explain the Mendelian and non Mendelian modes of inheritance, passage of genetic traits across generations, chromosome behaviour and changes in the chromosome structure.

Course Outcome for LAB:

The students are expected to-

CO1. Acquire knowledge of principles and working mechanisms of microscopes.
CO2. Understand the mechanism of mitosis and meiosis.
CO3. Gain slide preparation to observe of Giant chromosome, epithelial and blood cells.
CO4. Understand the theories of classical genetics and blood group inheritance in man.
CO5. Understand the genetic defects and inborn errors of metabolism and genetic counseling and role of inbreeding and outbreeding.
CO6. Understand the molecular structure of genetic materials and the mechanism of gene expression and regulation character formation.
CO7. Describe the mechanism of circulation and composition of blood.
CO8. Understand the types and importance of vitamins.
CO9. Understand the knowledge of cholesterol and its biological significance.
CO10. Understand the tools of gene manipulation and gene transfer.
CO11. Understand the nature and functional aspects of intraspecific association of animals.

Programme Specific Outcomes:

The student learner can-

1. Demonstrate a broad understood of invertebrate, Cell Biology, Genetics etc. including knowledge of the scientific classification and evolutionary relationships of major groups of animals.
2. Recognize 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.
3. Characterize the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine, host) that animals inhabit. They can also explaine how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments.

4. Explain how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system. Drawing upon this knowledge, they are able to give specific examples of the physiological adaptations, development, reproduction and behavior of different forms of life.
5. Understand the applied biological sciences or economic Zoology such as sericulture, Apiculture, aquaculture, Industrial microbiology, DNA technology and medicine for their career opportunities

M. Sc. (Zoology)

Program outcomes:

The students are expected to-

PO1. Recognize the scientific facts behind natural phenomena.

PO2: Relate the theory and practical knowledge to solve the problems of the society.

PO3: to be successful professionals in industry, government, academia, research, entrepreneurial pursuits and consulting firms.

PO4: can appear for high level competitive examinations like NET, SET, MPSC and UPSC.

PO5: Carry out internship program and research projects to develop scientific skills and innovative ideas.

PO6: Utilize the obtained scientific knowledge to create eco-friendly environment.

PO7: be expressive, ethical and responsible citizens with proven expertise.

Course Outcomes:

The students are expected to-

CO1. Acquire deep knowledge of the diversity and relationships in animal world.

CO2. Develop a holistic appreciation on the phylogeny and adaptations in animals.

CO3. To understand the evolution of universe and life.

CO4. Understan the process and theories in evolutionary biology.

CO5. Develop an interest in the debates and discussion taking place in the field of evolutionary biology.

CO6. Understand the chemical nature of life and life process.

CO7. Get an idea on structure and functioning of biologically important molecules.

CO8. Help to explore new developments in biochemistry.

CO9. Illustrate various Biochemical pathways.

CO10. Develop an interest in the debates and discussions associated with lifestyle and diseases.

Programme Specific Outcomes:

After successfully completing M. Sc. Zoology (Physiology) Programme students will be able to-

PSO1: Acquire knowledge on the various aspects of life sciences including Biochemistry, Cell and Molecular Biology, Genetics, Physiology, Developmental Biology, Endocrinology, Mammalian reproductive physiology, Biotechnology.

PSO2: Explain how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system and develop theoretical and practical knowledge in handling the animals and using them as model organism.

PSO3: Illustrate physiological adaptations, development, reproduction and behaviour of different forms of life.

PSO 4: Develop personal and key transferable skills such as group work, presentation and report writing.

PSO 5: Develop personal and key transferable skills such as group work, presentation and report writing.

PSO 6: Acquire skills in Zoology in a global, economic, environmental, and societal context.

PSO7. Develop proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization and relate concepts of comparative biology to explain evolution and success to live in varied environment.

PSO8: Pursue M. Phil/ Ph. D, compete in national eligibility test (NET) and select an independent professional career.

PSO9: Apply ethical principles and commit to professional ethics and responsibilities and norms of the work/research practice.