

DEPARTMENT OF ZOOLOGY

BSc Zoology

Programme outcomes

Program Outcomes:

After completion of this programme the student will be able to:

PO1: To foster curiosity in the students for Zoology

PO2: To create awareness amongst students for the basic and applied areas of Zoology

PO3: To highlight the potential of various branches to become an entrepreneur

PO4: To orient students about the importance of abiotic and biotic factors of environment and their conservation.

PO5: To provide an insight to the aspects of animal diversity.

PO6: To inculcate good laboratory practices in students and to train them about proper Handling of lab instruments.

Programme Specific Outcomes

After completion of this programme the student will be able to:

PSO1: Understand the basic and applied areas of Zoology.

PSO2: Acquire deep understanding of important concepts of Zoology at systematic, taxonomical, cellular, molecular, biochemical, physiological and histological level.

PSO3: Apply the knowledge and understanding of Zoology to one's own life and work.

PSO4: To inculcate good laboratory practices in students and to train them about proper handling of lab instruments.

PSO5: Gain knowledge about research methodologies, effective communication and skills of problem solving methods.

PSO6: Acquire knowledge of culturing techniques of some important animals in areas of classical and applied zoology.

PSO7: Develop empathy and love towards the Nature and Animals.

F. Y. B.Sc. Zoology (Autonomous)

Course outcomes

Course Title: Animal Systematics & Diversity I

Course Code-22-ZO-111

Course Outcomes

CO1. To acquaint students with the diversity of invertebrates.

CO2. To understand classification of animals using the six levels of classification.

CO3. To understand the morphological and anatomical features of representative animal

CO4. The students will be able to explain adaptations economic importance and special characters of invertebrates.

Course Title: Ecosystem and its Dynamics

Course Code-22-ZO-112

Course Outcomes

CO1: To understand basic concepts of population and community

CO2: To acquaint students with different food chains and food webs in ecosystem

CO3: To understand importance of biodiversity conservation

CO4: To acquaint students with biogeochemical cycles

Course Title: Zoology Practical

Course Code- 22-ZO-113

Course Outcomes

CO1. Student understands the taxonomy of representative museum specimen

CO2. To understand the morphological and anatomical features of representative animal

CO3: To acquaint students with physico chemical properties of water or soil through experiments

CO4: Students will be able to calculate diversity indices

CO5: Students will be able to observe and comment upon microscopic fauna

CO6: Student understands multidisciplinary approach of subject through field visit/study tour.

Course Title: Animal Systematics and Diversity II

Course Code-22-ZO-121

Semester II (2 credits-30 lectures)

Course Outcomes

CO1. To acquaint students with the diversity of invertebrates.

CO2. To understand classification of animals using the six levels of classification.

CO3. To understand the morphological and anatomical features of representative animal

CO4. The students will be able to explain adaptations economic importance and special characters of invertebrates.

Course Title: Fundamentals of Cell biology

Course Code-22-ZO-122

Semester II (2 credits-30 lectures)

Course Outcomes

CO1 : To understand detailed structure of animal cells

CO2 : To understand structure and functions of different cell organelles

CO3 : To acquaint students with cell cycles.

CO4 : To acquaint students with importance and scope of cell biology

Course Title: Zoology Practical

Course Code- 22-ZO-123

Semester II (1.5 credits)

Course Outcomes

CO1. Student understands the taxonomy of representative museum specimen

CO2, To acquaint students to study economic importance and adaptations in animals

CO3. To acquaint students with ultrastructure of organelles

CO4. To acquaint students with blood cells.

CO5.To acquaint students with mitosis and meiosis

CO6: Student understands multidisciplinary approach of subject through field visit/study tour

S.Y.B.Sc Zoology

Learning outcomes:

1. The students will be able to understand, classify and identify the diversity of higher vertebrates.
2. The students will be able to understand the complexity of higher vertebrates
3. The students will be able to understand different life functions of higher vertebrates.
4. The students will be able to understand the linkage among different groups of higher vertebrates.

The student will become aware regarding his role and responsibility towards nature as a protector, to understand his role as a trustee and conservator of life which he has achieved by learning, observing and understanding life.

5. The learner understands the basics about beekeeping tools, equipment, and managing beehives.
6. The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.
7. The learner understands the biology, varieties of silkworms and the basic techniques of silk production.
8. The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.

Course Title: Animal Diversity - III,

Course Code: ZO – 231,

Course Title: Animal Diversity IV

Course Code: ZO 241

course outcomes:

CO-1: To understand the origin and advancement of higher vertebrates (tetrapoda).

CO-2: To understand general characters of different groups of higher vertebrates.

CO-3: To classify vertebrates and to become able to understand the possible group of vertebrates observed in nature.

CO-4: To understand different behaviours and adaptations in higher vertebrates

CO-5: To understand affinities among different groups of higher vertebrates.

ZO 232, 242, Applied Zoology I and II

CO-1: To understand the basic life cycle of the honeybees, beekeeping tools and equipments.

CO-2: To learn for managing beehives for honey production and pollination.

CO-3: To understand the basic information about fishery, cultural and harvesting methods of fishes.

CO-4: To understand fish preservation techniques.

CO-5: To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons.

CO-6: To learn the different silkworm species and their host plants.

CO-7: To study types of agricultural pests and Major insect pests of agricultural importance.

CO-8: To study Pest control practices.

T. Y. B. Sc. Zoology

ZO 331: Animal Systematics and Diversity V

After successfully completing this course, students will be able to:

CO1- Knowledge of classification of protochordates and chordates along with studies on various physiological functions and interactions of chordate organisms with examples

CO2- Imparts conceptual knowledge of vertebrate adaptations in relation to their environment

CO3- Understanding of general taxonomic rules on animal classification

CO6-Knowledge of classification of Non-chordates along with studies on various physiological functions and interactions of non-chordate organisms with examples

ZO 332: Mammalian Histology

After successfully completing this course, students will be able to:

CO1: Define the basic terms in histology.

- CO2: List the various types of tissues.
CO3: Identify the histological peculiarities in various organs.
CO4: Explain the location, structure and functions of various organs.

ZO 333: Biological Chemistry

After successfully completing this course, students will be able to:

- CO1: Define the basic terms in biochemistry.
CO2: Explain the structure, functions and reactions of the various biomolecules. CO3: Give examples of each group type of biomolecules.
CO4: Correlate the changes in the levels of these biomolecules with the diseases in human

ZO 334: Environmental Biology and Toxicology

After successfully completing this course, students will be able to:

- CO1: An overview of evolutionary ecology and environmental concepts
CO2: Description of nature of ecosystem, production, food webs, energy flow, biogeochemical cycles, resilience of ecosystem and ecosystem management.
CO3: Understanding the biosphere, biomes and impact of climate on biomes. CO4: Description of biodiversity assessment, conservation and management, Sustainable development, natural resource management in changing environment.

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ZO 335: Parasitology

After successfully completing this course, students will be able to:

- CO 1: Define the basic terms in parasitology.
CO2: List common ectoparasites and endoparasites.
CO3: Explain animal associations and their types.
CO4: Discuss the life cycle and importance of major parasites.
CO5: Illustrate transmission routes of animal and zoonotic parasites
CO6: Classify parasites.
CO7: Justify the control measures of arthropod vectors.
CO8: Convince the importance of hygiene with respect to epidemic diseases.

ZO 336 Cell Biology

After successfully completing this course, students will be able to:

- CO1: Define the terms in cell biology
CO2: Describe the composition, structure and functions of the plasma membrane. CO3: Describe the three primary components of the cell's cytoskeleton and how they affect cell shape, function, and movement.
CO4: Differentiate between prokaryotes and eukaryotes.

ZO 341 Biological Techniques

After successfully completing this course, students will be able to:

- CO1: Define the basic terms solution preparation.
- CO2: List the separation techniques.
- CO3: Explain the principle of separation techniques.
- CO4: Explain the procedure of preparing permanent histological slides.
- CO6: Illustrate the working of microscopes.

ZO 342 Mammalian Physiology and Endocrinology

After successfully completing this course, students will be able to:

- CO1: Define the basic terms in physiology.
- CO2: Explain the physiological processes in mammals.
- CO3: Explain the anatomy of various systems.
- CO4: Illustrate the reproductive cycles with hormonal control.
- CO5: Diagrammatically represent the working of kidney.
- CO6: Justify the endocrine disorders.

ZO 343 Genetics and Molecular Biology

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After successfully completing this course, students will be able to:

- CO1: Define the basic terms in genetics.
- CO2: Discuss the linkage groups and gene frequency.
- CO3: Explain the concept of mutation.
- CO4: Explain DNA structure.
- CO5: Paraphrase the Central dogma of molecular biology.
- CO6: Illustrate the mechanism of replication, transcription and translation.

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ZO 345 General Embryology

After successfully completing this course, students will be able to:

- CO1: Identify the developmental stages
- CO2: Describe the key events in early and systematic embryological development. CO3: Explain the theories of preformation, and concepts like growth, differentiation and reproduction.
- CO4: Explain the principles and process of fertilization and cleavage.
- CO5: Elucidation of early embryonic development of invertebrates and vertebrates.

ZO 346 Medical Entomology

After successfully completing this course, students will be able to:

- CO1: Outline the branches of entomology.
- CO2: Define medical entomology.
- CO3: Explain the social organization of insects with examples.
- CO4: Illustrate the role of household insects in relation to human health.

CO5: Classify major medically important insects.

ZO 347, 348,349- Practical Paper I, II, III

After successfully completing this course, students will be able to:

- CO1-First-hand knowledge about identification of non-chordate and chordate specimens (fresh and preserved) along with larval forms and study of endoskeleton of vertebrates
CO2-Students are able to handle microscopes, work with camera lucida and micrometers
CO3-Identification of zooplanktons and phytoplanktons
CO4-Gain skill about histological slide preparation, staining and mounting
CO5-Students gain skill about determination of pH and quantitative analysis of blood cells
CO6-Students are able to parasites from rectal and fecal contents of animals
CO7-Students are able to collect parasite and pest specimen