

COURSE OUTCOMES OF B.SC I (ZOOLOGY)

Semester- I

Course ZOOLOGY 1.1- LIFE AND DIVERSITY FROM PROTOZOA TO HELMINTHES

CO1. Understanding the general taxonomic and classification rules for the study of animals.

CO2- Knowledge of classification of Non-chordates (Protozoa to Helminths); detailed cellular, anatomical and physiological studies through the study of type organism of each phylum.

CO3: Introduction to the process of evolution (unicellular cells to complex, multicellular organisms).

CO4: Knowledge and awareness of the Biodiversity, various interactions of non-chordate organisms and the economic importance of invertebrate fauna. with examples.

Course Zoology 1.2- Cell Biology

CO1: Basic concepts, structure and function of various cell organelles of animal cell such as Plasma Membrane, Endoplasmic reticulum, Golgi complex

CO2: Understanding structure, biogenesis and cellular functions of Ribosomes, Lysosomes, Mitochondria, Cytoskeleton elements viz. Microtubules, microfilaments, centriole, basal body and locomotor organelle i.e. Cilia and Flagella

CO3: Analysis of ultrastructure of nucleus and nuclear membranes, polytene, lampbrush chromosomes

CO4: Conceptual idea about mitosis, meiosis and elementary awareness regarding cancer and immune mechanisms

Semester-II

Course ZOOLOGY 2.1- LIFE AND DIVERSITY OF ANNELIDA TO HEMICHORDATA

CO1: Knowledge of classification of Non-chordates (Annelida to Hemichordata); detailed cellular, anatomical and physiological studies through the study of type organism of each phylum.

CO2: To build conceptual understanding of the affinities and evolutionary significance of various larval stages in non-chordate phyla and the importance of hemichordates as being the connecting links between non-chordates and chordates.

CO3: Awareness about the animal world biodiversity and economic importance of annelids, insects, molluscs etc.

CO4: Understanding typical developmental phenomenon like torsion and detorsion in gastropods, foot modifications in mollusks; structural marvels like aristotle's lantern in Echinoderms.

Course Zoology 2.2 Genetics

CO1: Develop idea about allelic and non-allelic interactions, linkage, crossing over and problem-solving approach for genetic maps

CO2: Comprehensive mechanisms for Sex determination, cytoplasmic inheritance and role environmental factors and hormones in sex determination

CO3: Acquiring knowledge of multiple concepts such as Multiple allelism, Human genetics, Human karyotype, Chromosomal abnormalities, Inborn errors of metabolism

CO4: Broad analysis of Nature and function of genetic material; Structure and type of nucleic acids; Protein synthesis, Mutations and Applied genetics.

COURSE OUTCOMES OF B.SC II (ZOOLOGY)

Semester- III

Course ZOOLOGY 3.1- LIFE AND DIVERSITY OF CHORDATES – I

CO1: Understanding the basic principles of classification and salient features of chordates.

CO2: Introduction to the process of evolution by the study of origin of various chordate phyla through study of evolutionary trees.

CO3: Studying the general characters of chordate phyla from protochordates to Pisces and study of functional morphology of the type organism in each taxon.

CO4: Knowledge of the biodiversity and economic importance of different phyla.

CO5: Understanding the ecological significance of organisms and conservation measures (where required) for each phylum.

Course Zoology 3.2 MAMMALIAN PHYSIOLOGY – I

CO1: Structural and molecular information regarding carbohydrates and lipids

CO2: Introduction of detailed Structure and function of proteins and Transport through bio membranes

CO3: Awareness about appropriate intake of nutritional components- Carbohydrates, fats, lipids, Vitamins and Minerals and Digestion of dietary constituents, viz. lipids, proteins, carbohydrates & nucleic acids and Absorption of nutrients & assimilation; control of enzyme secretion.

CO4: Biochemical and structural analysis of Bones and muscles

Semester-IV

Course ZOOLOGY 4.1- LIFE AND DIVERSITY OF CHORDATES – II

CO1: Knowledge of classification of vertebrates (Amphibia to Mammalia) and functional morphology of the type organism in each class.

CO2: Understanding of the origin, evolutionary history and adaptive radiation by means of evolutionary trees and fossil studies.

CO3: Awareness about the complex phenomenon typical of higher animals such as parental care, migrations, etc.

CO4: Understanding the special adaptive features in reptiles, aves and mammals for their specific modes of life.

Course Zoology 4.2 MAMMALIAN PHYSIOLOGY – 2

CO1: Familiarity with functioning of circulatory system focussing heart rhythms, conduction cycles and outputs and functional aspects of blood and associated factors.

CO2: Awareness regarding Respiratory mechanisms, their control and associated phenomenon's viz. Bohr's effect, Haburger's phenomenon (Chloride shift). Study of Patterns of excretory products viz. and urea formation in liver.

CO3: Continual study of Urine formation, counter-current mechanism of urine concentration, osmoregulation, micturition and understanding propagation of Neural information in medullated & non-medullated nerve fibre, conduction of nerve impulse across synapse.

CO4: Correlation and coordination of hormones and their mechanism of actions and study Reproduction physiology of mammals.

COURSE OUTCOMES OF B.SC III (ZOOLOGY)

Semester- V

Course ZOOL 5.1- Fish and Fisheries

CO1: Understanding of world fisheries and fresh water fishes of India

CO2: Describing Fishing crafts and gears and Fin fishes, Crustaceans, Molluscs and their culture.

CO3: Understanding natural seed resources and Sources of food (Natural, Artificial) and feed composition (Calorie and Chemical ingredients).

CO4: Elaborating Field Culture like Ponds-running water, recycled water, cage, culture; poly culture and Biotechnology, gene manipulation and cryopreservation of gametes.

Course ZOOL 5.2- Ecology and Evolution

CO1- Basic understanding of definition, significance, Concepts of habitat and ecological niche, Abiotic factors (light-intensity, quality and duration), temperature, humidity, topography; edaphic factors; biotic factors.

CO2- Imparting Knowledge of ecosystem, Ecological energetics and energy flow-food chain, food web, trophic structure; ecological pyramids concept of Productivity, Biogeochemical cycles and Population

CO3: Concept of origin of life, theories of organic evolution, Concept of microevolution and species

CO4: Concept of macro-and mega-evolution, Phylogeny of horse and Evolution of man.

Semester-VI

Course ZOOL 6.1- Entomology

CO1: Study of important insect pests of crops and vegetables, Sugarcane and cotton with their systematic position, habits and nature of damage caused

CO2: Study of important insect pests of crops and vegetables, wheat and paddy with their systematic position, habits and nature of damage caused

CO3: Study of important insect pests of vegetables and stored grains with their systematic position, habits and nature of damage caused.

CO4: Insect control, biological control and Chemical control of pests, integrated pest management, Important bird and rodent pests of agriculture & their management.

Course ZOO 6.2- Developmental Biology

CO1: Understanding of Historical perspectives with structure of mammalian ovum & sperm, Spermatogenesis and Oogenesis.

CO2: Fertilization, parthenogenesis, different types of eggs and patterns of cleavage, blastulation in invertebrates and vertebrates, Fate-map construction in frog and chick.

CO3: Gastrulation in invertebrates and vertebrates, in frog and chick, primary organizers.

CO4: Extra embryonic membranes, Concepts of competence, determination and differentiation, regeneration.