Course Outcome of Dept of Zoology

Core Course I

Course code: ZC101T (Non chordates I: Protists to Pseseudocoelomates)

Learning Outcome: From this course learners will be able to learn about various forms classification and structural anatomy of protozoa, cnidaria and worms. They will understand structural organization, nutrition and life cycle of Euglena, Amoeba, Paraecium as well as pathogenicity of *Plasmodium vivax,* canal system in porifera, polymorphism in cnidaria, metagenesis in obelia, evolutionary significance of ctenophora. They will also learn about the deferent phases in the life cycle of worms like *Fasciola hepatica*, *Taenia solium*, *Ascaris lumbricoides* and *Wucheria bancrofti,*

Core Course II

Course code: ZC102T (Principles of Ecology)

Learning Outcome: Learners will be able to know the fundamentals of ecology and impacts of ecological factors on living organisms from this course. After completion of this course the will learn auteclogy, synecology, laws of limiting factors, abiotic factors. They will also understand unitary and modular population, population density, natality, mortality, age and sex ratio, population growth form, population interaction, population dispersion, community, species diversity, ecotone ecological succession, ecosystem, different types of food chain, food web, energy flow, ecological pyramids, nutrient cycle as well as wildlife conservation

Core Course III

Course code: ZC203T (Non chordates I: Coelomates)

Learning Outcome: Learners will be able to learn various forms of coelomates, their classification and structural anatomy from this course. They will learn about metamerism and excretion in Annelida, respiration and vision in Arthopoda, social life in insects, evolutionary significance of Onychophora, torsion and detorsion in Mullusca, water vascular system in Ecinodermata, larval forms of Echinodermata, as well as affinities of Echinodemata with chordates from this course.

Core Course IV

Course code: ZC204T (Cell Biology)

Learning Outcome: This course is about the structure and function of cell as the fundamental unit of life. Learners will learn about prokaryotic and eukaryotic cell and their differences, as

well as different organelles of eukaryotic cell like Nucleus, endoplasmic reticulum, Golgi apparatus, Lysosomes, Mitochondria, perioxisomes. They will understand the structure and transport across plasma membrane. Semi autonomous nature of Mitochondria, They will also get to know about different types of cell division, cell cycle and cell signaling.

Core Course V

Course code: ZC305T (Diversity of Chordata)

Learning Outcome: This course is about various forms of chordates, their classification and structural anatomy. Learners will learn about characteristics of Hemichordata, Urochordata and Cephalochordata, larval forms of protochordates, retrogressive metamorphosis in Urochordata, origin of chordata, Agnatha, migration and parental care in pisces, parental care in Amphibia, affinities of spehnodon, poison apparatus and biting mechanism of snakes, flight mechanism in birds, affinities in Prototheria, adaptive radiation of mammals for locomotion. In this course one unit is on Zoogeography, from this unit learners will able learn about zoogeographical realms and distribution of vertebrates in those realms, plate tectonics as well as continental drift.

Core Course VI,

Course code: ZC306T (Animal Physiology: Controlling And Coordinating Systems)

Learning Outcome: This course is about tissue, muscle, bone, reproductive system, nervous system and endocrine system. Learners will be able to learn about different types of tissue and bones and cartilage, their location, structure and functions. They will also understand bone growth, resorption, structure of neuron, origin as well as propagation of action potential across nerve fibres, different types of synapses and synaptic transmission, structure of muscle and basis of muscle contraction. From this course learners will also learn about histology of testis as well as ovary, physiology of reproduction and methods of contraception. This course also includes functioning of endocrine glands as well as neuroendocrine glands of human body and their regulation of their secretions.

Core Course VII,

Course code: ZC307T (Fundamentals Of Biochemistry)

Learning Outcome: This course is about biomolecules of living organisms and their interactions for perpetuation of life. From this course learners will be able to learn structure, types, functions and importance of carbohydrates, proteins, lipids and amino acids. They will also learn about immunoglobulins, nucleic acids, DNA & RNA as well as their types. This course also includes one unit on enzymes, from which they will understand about different classes of enzymes, mechanism of enzyme action, factors affecting enzyme catalyzed reactions,

allosteric enzymes, enzyme regulation and inhibition, Michaelis -Menten equation as well as concept of Km and Vmax.

Core Course VIII

Course code: ZC408T (Comparative Anatomy of Vertebrates)

Learning Outcome: The course aims to understand the students among different animals by comparing their anatomical systems. After completion of the course learners will be able to understand the anatomical similarities, differences and advance anatomical characters of animals from different phylum of vertebrates. They will learn about systems like integumentary, skeletal, reproductive, circulatory, urinogenital, nervous system of vertebrates.

Core Course IX

Course code: ZC409T (Animal Physiology & Life Sustaining Systems)

Learning Outcome: After completion of this course, learners will be able to learn the functions of living organisms and their parts including physical & chemical process. It provides a through understanding of normal body functions, enabling more effective treatment of abnormal or disease state.

Core Course X

Course code: ZC410T (Biochemistry Of Metabolic Processes)

Learning Outcome: The course is about the biochemistry of metabolic processes of living organisms. After completion of this course, learners will understands catabolism, anabolism, role of ATP as an energy currency of cell, metabolism of biomolecules like carbohydrates, protein, and lipid. They will also learn about oxidative phosphorylation processes like electron transport chain.

Semester V

Core Course XI

Course code: ZC511T (Molecular Biology)

Learning Outcome: This course is about the molecular biology of living organisms. After completion, learners will understands features of DNA &RNA, their types, differences, replication DNA, Transcription of RNA, translation, DNA repair mechanisms and gene regulation.

Core Course XII

Course code: ZC512T (Principles of Genetics)

Learning Outcome: The aim of this course is to give knowledge of genetics in agriculture, biology and medicine. After completion of this course learners will able to understand inheritance, role of linkage and crossing over in genetics, gene mutation, extra-chromosomal inheritance as well as transposable genes or jumping genes.

DSE Course I

Course code: ZD503T (Endocrinology)

Learning Outcome: The aims of this paper tried to emphasize basic principles and have illustrated them with examples taken both from clinical endocrinology and from comparative endocrinology. After completion of this course learners will be able to learn about classification, characteristics of Hormone, Neurohormones, regulation of hormone action, second messengers, disorders of endocrine glands, Hyphothalmo-hypophysial Axis, structure of different endocrine hormone.

DSE Course II

Course code: ZD504T (Biology of Insecta)

Learning Outcome: After completion this course learners will understands general features, distribution of insects, their morphology, reproductive , endocrine , nervous system ,their classification, physiology & body system of insects social organization & behaviour of insects, role of alleolochemicals, insect plant interation, phytophagus insects, disease causing insect vectors.

Core Course XIII

Course code: ZD613T (Developmental Biology)

Learning Outcome: After completion of this course, learners will understands phases of development, early embryonic developmental stages, late embryonic development stages, post embryonic development, metamorphosis, ageing and implications of developmental biology.

Core Course XIIV

Course code: ZD614T (Evolutionary Biology)

Learning Outcome: This course is about the beginning of life on earth as well as evolution of organisms. After completion of this course, learners will be able to learn about the evolutionary concept of organisms like Darwinism, Lamarckism, evidences of evolution, heritable variations, population genetics, natural selection, extinction of organisms, phylogenetic tree and its interpretation.