

**Dept of Zoology**  
**Course outcome**

**B.Sc. (Hons.) 3 Year (six semester) Course**

Students will acquire the following knowledge

**Semester I**

Systematics and Diversity of Non Chordate, Binomial & Trinomial nomenclature, New trends in animal Taxonomy, Chemotaxonomy, Cyto-taxonomy & Molecular Taxonomy, Non-Chordates: Characters & Classification, Coelomates, Annelida, Arthropoda, Mollusca, Echinoderm, Principle of Ecology, Components of ecosystem, Major ecosystems in world, Energy flow in ecosystem, Productivity, food chain and food web, Food Pyramid, Bio-Geochemical cycle, Water Cycle, Gaseous Cycles- Carbon and Nitrogen, Sedimentary Cycle- Phosphorous and Sulphur

Population characteristics: Density, Natality, Mortality, Age pyramid and growth curve, Nature, Structure and attributes of biological communities, Ecological succession and concept of climax, Pollution, Natural resources, Soil, water, mineral resources and their conservation, Biodiversity- benefits, hotspots, threats and conservation, Human impact on mineral resources, Renewable and Non Renewable Source of Energy

**Semester II**

The Cell and its Organization, Nucleus, Cell Division, Elementary idea of Apoptosis & Necrosis, Diversity of Chordates, Hemichordates & Protochordate, Chordates, Proto-chordates, Cyclostome, Fish & Amphibians, Reptiles, Birds & Mammals, Chordate, Diversity, Pisces, Amphibia, Reptiles, Aves, Prototheria

**Semester III**

Mammalian Physiology, Nutrition and Digestion, Respiration and Circulation, Mechanism and regulation of breathing, Transport of oxygen and carbon dioxide, Respiratory quotient, O<sub>2</sub> and CO<sub>2</sub> dissociation curve, Bohr and Haldane effect, chloride shift, Composition of blood, Blood groups and Blood clotting, Cardiac cycle and its regulation, Urino- Genital Physiology, Nephron, Urine formation, Hormonal control of renal function, Anatomy of Human reproductive organs, Menstrual Cycle in Humans, Nerve physiology, Biochemistry, Biomolecules, Amino acids, Proteins, Carbohydrates, Lipids, Enzymes, Nucleic acids, DNA structure, Types of RNA, Glycolysis, kreb's cycle, Beta oxidation, Hormones and its classification, Neurohormones and neurotransmitters, Pheromones, General mechanism of hormone action, Gastrointestinal hormones (gastrin, CCK, secretin and motilin), Structures and functions of endocrine organs, Pituitary, Thyroid, Adrenal, Endocrine pancreas, Pineal, hormones, Drugs and Human health- production of hormones as pharmaceuticals, The potential scope of aquarium fish industry as a Cottage Industry. Exotic and Endemic species of Aquarium fishes, Common Characters and sexual dimorphism of fresh water and marine Aquarium fishes such as Guppy, Molly, Sword tail, Gold Fish, Angel fish, Blue morph, Anemone fish and butterfly fish, Live fish transport- Fish handling, packing and transport techniques, General Aquarium, maintenance-budget for setting up an aquarium fish farm as a cottage industry, Common disease of aquarium fishes and their treatment

**Semester IV**

Genetics, Evolution, Animal Behaviour, Elements of heredity and variation, Extension of Mendelism, Dominance relationships (Complete dominance incomplete dominance and co- dominance), multiple allelism, Lethal alleles, Pleiotropy, Epistasis, Polygenic inheritance, cytoplasmic inheritance, Linkage and crossing over, Sex Determination, Mutation

**Semester V**

Hardy Weinberg law of Equilibrium, Level of Evolution, Concepts and pattern of Behaviour

Control of Behaviour, Social organization in honey bee and Termites, Communication in animals

Migration in Fishes and Birds, Biological Rhythms, Parental Care in fishes and Amphibia

Vermi-culture & composting, Introduction to Immunity, Cell and organs of immune system

Humoral immunity, Cell mediated immunity, Early embryonic development, Late embryonic Development, Bee-keeping and Bee Economy (Apiculture), Silk and Silk Production, (Sericulture), Aquaculture, Dairy/Poultry Farming, Biostatistics

**Semester VI**

Molecular Biology & Biotechnology, Nucleic Acids, Gene Regulation, Elementary idea of Repetitive DNA damage & DNA repair mechanism, Biotechnology, Pathogenicity, clinical features, prophylaxis and control of pathogenic protozoan, Pathogenic Helminthes parasites, clinical Features, Control and prophylaxis, Vector Biology, Non Vector Diseases, General Account of Vaccine & Vaccination, Eradication Programme, drug Therapy and drug resistance, Wild life conservation and management, Agrochemical & pest management