

Course Outcomes B.sc. Zoology

Course outcomes – 1st year

Animal Systematic and Diversity and Non-Chordates

Paper 1st

After completion of these courses students should be able to:-

Co.1- Understand the Zoological nomenclature- International code.

Co.2 - To understand about the lower and higher non-chordates.

Co.3- To study external and internal characters of nonchordates.

Co.4- To understand the various internal systems like Digestive, Excretory, Respiratory, Nervous and Reproductive system of nonchordates with the help of charts and models.

Co.5- To understand the economic importance of protozoan, annelid, arthropods and echinoderms.

Co.6- To understand the economic importance of minor phyla.

Cell Biology Paper 2nd

Co.1- To understand the scope of cell biology, main Distinguish character of plant and animal cell.

Co.2- To understand the whole cell organelles with their structure and function.

Co.3- To understand the cell cycle and know the importance of various cells in body of organisms.

Co.4- To understand the nucleus different types of chromosome.

Co.5- To understand the different stages of developmental biology.

Co.6- To study and understand of development of frog and chick.

Course Outcomes B.sc. Zoology

2nd year

Vertebrates of Evolution

- Co.1- To understand about the origin & systematic position of chordates.
- Co.2- To study external and internal characters of chordates.
- Co.3- To understand about comparative account of different system as well as Skeleton, Digestive system. Respiratory system, Circulatory system and urinogenital system of different phyla of vertebrate.
- Co.4- To understand origin of life evidences and theory of organic evolution.
- Co.5- To understand Geological time cycle. Geographical distribution and methods and classification of animal distribution.
- Co.6- To understand fossils, evolution of man and study of extinct forms like Dinosaurs and Archaeopteryx.

Animal Physiology and Biochemistry

1. To understand the importance of physiology and Bio-chemistry.
2. To study Digestive, Respiratory, Excretory and Nervous system of Vertebrate.
3. To study and understand the. Process of metabolism like as protein, carbohydrate and lipid.
4. To study enzyme and its regulatory mechanism and role of vitamins.
5. To study physiology of nerve. Impulse conduction and theory of muscles contraction and its biochemistry.
6. To understand structure and function of different endocrine glands as well as Pituitary, Thyroid, Adrenal, Parathyroid and Thymus.

Course Outcomes B.sc. Zoology

3rd year 1st paper

Genetics

1. To understand Heredity and Genetic material.
2. To study Structure, Molecular organization and DNA Replication and Prokaryotes.
3. To study and understands Transcription Translation in Prokaryotes.
4. To study Genetic code and Gene Expression.
5. To study linkage, crossing over, sex determination, sex linked inheritance and mutation.
6. To understand detail study of human genetics and genetics diseases like sickle Cell anemia, Albinism and Thalassaemia.
7. To understand Recombination DNA technology, PCR, DNA, Finger printing and Gene therapy.

Ecology and Applied Zoology

1. To understand Concept of Ecology like as energy flow, component of Ecosystem, energy flow in Ecosystem, biogeochemical cycle and Population Concept.
2. To understand habitat ecology (fresh water, marine terrestrial) and biodiversity with special reference to forest.
3. To understand wild life and Environment.
4. To study pollution urbanization and effect of human population on environment.
5. To study Aquaculture, like as Prawn culture Pearl culture, Frog culture and Carp culture.
6. To study Economic entomology like as sericulture, apiculture and lac culture.
7. To study common Pest and biological control of insect pest.

Course Outcomes M.sc. Zoology

Biosystematics, Taxonomy and Evolution

After completion of these courses students should be able to:-

1. To understand basic concepts of biosystematics. Taxonomy and Classification.
2. To understand theories concepts and modern trend of evolution.
3. To understand Isolation, Phylogenetic, Graduction and Punctuated equilibrium.
4. To study taxonomic procedure, taxonomic key, international code of zoological Nomenclature.

Structural Functional and Invertebrates

1. To understand the various internal system like digestive, Respiratory, Excretory system, Nervous and life history of non-chordate.
2. To study structure, affinities and life history of different minor phyla animals.

Quantitative biology, Biodiversity & wildlife

1. To understand Definition and Calculation and study of Graph and Histogram, Bar diagram and Pictogram Including application.
2. To understand concept, Principal, Conservation and causes for the loss of biodiversity.
3. To study of wildlife of india such as wildlife protection act, conservation of wildlife, cause for the extinction of Dinosaur.
4. To study National park & Sanctuaries, wildlife corridor, wildlife Crossing.
5. To study project tiger & Project Gir lion, Crocodile Conservation.
6. Endangered and threatened Indian sps.

Biomolecules and structural biology

1. To understand chemical foundation of biology like as PH,PK Acid base, buffers and Nanoparticles etc.
2. To study brief structure of Protein, Nucleotides, DNA & RNA and its synthesis.
3. To understand Carbohydrate, Fat metabolism It synthesis and TCA cycle.
4. To understand Enzymes its mechanism and Thermodynamics.

II SEM

General and comparative Animal Physiology and Endocrinology

1. To Understand Physiology of Digestion, Respiration Excretion, Osmoregulation, Nerve impulses transmission
2. To study different type of receptors like mechano, photo pheno, chemo, lateral line, system & Bioluminescence .
3. To study hormones, hormone receptors mechanism of hormone action, pheromones, chromatophores and regulation of their functions.
4. To understand structures and functions of endocrine gland, phylogeny and ontogeny of endocrine gland and Neuro endocrine systems in vertebrates.

Population ecology and Environmental physiology

1. To understand populations and its characteristics, population growth, population dynamics and factors affecting population.
2. To understand Environmental limiting factors, inter-specific and intra-specific and Intra specific biotic factor included positive and negative Interactions and Environmental Degradation.
3. To understand different Eco-physiological Adaptation and protection Adaptation.
4. To understand Natural resource and their conservation, Radiation Ecology, Global Warming.
5. To understand physiological response to body exercise, Yoga and their effects.

Tools and Techniques in Biology

1. To understand General principle and application of colorimeters, spectrophotometers, flame photometers, light electrons and phase contrast microscope.
2. To understand separation technique centrifugation, chromatography and Electrophoresis.
3. To Understand Different Microbiological Technique, Cryotechnique, Radioactivity, Immunological Technique, cell Culture Cytological and Molecular Biology technique.
4. To study Different types of Microtomes & its applications.

1. To Understand Molecular composition Functions of Biomembrane Cell-Cell Signaling, Cell, Cell Adhesion and Communication.
2. To study sex Determination in Drosophila and Mammals Cryogenetic of human Chromosomes Human Genome Project (HGP) and Transgenic animals and their application.
3. To Understand Genetic disease and Genomics, Gene therapy Genetic counseling, Genetic screening and Gene libraries.

III SEM Morphology

Comparative anatomy of vertebrates

1. To understand origin evolution morphology and concept of protochordats chordate.
2. To understand comparative anatomy of digestive respiratory, circulatory and nervous system of vertebrates.
3. Evaluations of Heart, Aortic arches Portal system and urinogenital system.
4. To understand comparative account of different receptors Organs of vertebrates.
5. To understand origin, evolution and general organizations of Ostraco cyclostomes, Gnathostomes Elasmobranchii Dipros Holocephali & crossopterygi

Limnology

1. To understand limnology Definition, historical development and scope of Limnology, Methods of water quality Bioindicators.
2. To study physio chemical characteristics Abiotic factors
3. to study of biology aquatic flora & fauna
4. pollution, aquatic resources & Their conservation.

Eco- Toxicology

1. To study of general principles of environmental communities of environment Ecosystem, environmental conservation.
2. To understand productivity production & analysis. recycling and reuse technology, remote sensing.
3. To study kinds of environmental pollution & their control method.
4. toxicology – basic concept , principle ,public health hazards agrochemical use & misuse alternatives.

Zoology aquaculture

1. To understand Aquaculture – History , fishery resources of India & MP in particular.
2. To study fish culture - mono poly & composite fish culture.
3. fish breeding in artificial and natural condition .
4. To understand fresh water fish farm engineering, different types of fish pond.
5. Fish preservation, by product and fish industry.

IV SEM

Animal behaviour and neurophysiology

1. To understand Ethology, Perception of environment.
2. To understand neural & hormonal control of behaviour Motivation Communication
3. To Ecological accept and behaviour, learning and memory.
4. To study reproductive behaviour, social behaviour Receptor physiology.

Gamete biology, development and differentiation

1. To study of development and differentiation of Gonads.
2. To understand ovarian follicular growth & differently multiple ovulation embryo transfer technology (IVF).
3. To study Hormonal Regulation of Ovulation, Pregnancy & Parturition, cry Preservation and Placenta.
4. To understand cell commitment and Differentiation Creating new cell types, embryonic Stem cells, Stem cell Disorders.

Ichthyology (fish) structure and Function

1. origin, evolution and classification of fishes.
2. To understand fish integument, Digestive system Respiratory system, Excretory system and osmoregulatory system in fishes.
3. Receptor organ, reproductive system and development of fishes.
4. To study Deep Sea Adaption, Hill Stream Adaption Migration and venomous fishes.