

Part I: Course outcome**Name of Course UG/PG Level**

B.Sc. Level Course

B.Sc. I Year Zoology

Course/Paper

Paper I

Name of course/Paper

Cell Biology & Non Chordata

B.Sc. I Year Zoology

Paper II

Chordata & Embryology

B.Sc. II Year Zoology

Paper I

Anatomy & Physiology

B.Sc. II Year Zoology

Paper II

Vertebrate Endocrinology,
Reproductive Biology, Behavior,
Evolution and Applied Zoology

B.Sc. III Year Zoology

Paper I

Ecology, Environmental
Biology, Toxicology,
Microbiology, Medical
Microbiology

B.Sc. III Year Zoology

Paper II

Genetics, Cell Physiology,
Biochemistry, Biotechnology
and Biotechniques

M.Sc. 1st Semester Zoology

Paper I

Biosystematics, Taxonomy &
Bio-diversity

M.Sc. 1st Semester Zoology	Paper II	General Physiology & Endocrinology
M.Sc. 1st Semester Zoology	Paper III	Structure & Function of Invertebrate
M.Sc. 1st Semester Zoology	Paper IV	Molecular Biology & Biotechnology
M.Sc. 2nd Semester Zoology	Paper I	Quantitative Biology & Computer Application
M.Sc. 2nd Semester Zoology	Paper II	Gamete Biology & Development Biology
M.Sc. 2nd Semester Zoology	Paper III	Population Genetics & Evolution
M.Sc. 2nd Semester Zoology	Paper IV	Tools & Techniques in Biology
M.Sc. 3rd Semester Zoology	Paper I	Comparative Anatomy of Vertebrate
M.Sc. 3rd Semester Zoology	Paper II	Biological Chemistry
M.Sc. 3rd Semester Zoology	Paper III	Environmental Biology & Population Ecology

M.Sc. 3rd Semester Zoology	Paper IV	Animal Behaviour
M.Sc. 4th Semester Zoology	Paper I	Environmental Physiology
M.Sc. 4th Semester Zoology	Paper II	Immunology & Parasitism
M.Sc. 4th Semester Zoology	Paper III	Ichthyology
M.Sc. 4th Semester Zoology	Paper IV	Aquaculture & Fishries

Part II: Programme outcome
Name of programme/degree

Name of subject **Programme outcome**

Zoology
 A Bachelor of Science degree (or BSc for short) is a degree awarded at universities around the world for completion of an undergraduate-level study in a science- or technology-related field.

B.Sc. Programme outcome

It engages the student at their teenage and mould their brain upto a maturity level by the time program gets completed.

[Enrolling in an BSc degree program translates to making a significant investment in one's professional career and also helps the student to get prepared for the professional examinations like IAS, IFS, PSC, Bank Services etc.](#)
 In addition to the enhanced ~~career prospects that can be~~ [prerequisite to Master studies.](#)

B.Sc level programme is designed in such a manner that a student can post completion can align to any related course of M.Sc.

The syllabus of B.Sc. Zoology connect various key academic field of Elite course of M.Sc. Zoology like Master's in Ethiology, Cytology , Entomology, Environmental Science, Bio technology, Microbiology, Ninnology, Endocrinology, Physiology, Wildlife Conservtion, Animal Behavior etc.

M.Sc. Programme outcome

Zoology

A Master of Science degree provides scientific as well as professional entry-level competency to students.

This program offers advanced theoretical as well as practical knowledge to students in their chosen specialisation.

The MSc specialisation opted by students is usually the one studied by them during graduation and ehance their knowledge in selected subject.

[This program is a prerequisite to enter into careers like lecturer in schools, Asst. Professor in colleges, and also open portal to appear in examinations like NET, SET, GATE etc.](#)

It is also a mandatory program for further specialization like M.Phil. , Ph.D. and D.Sc.

The course is designed to provide the in-depth knowledge of the Specialized Subject.

It further enhances the vocabulary, skill sets, reasoning and IQ level.

Ph.D. Programme outcome

Zoology

[This course is thus necessary for enhanced intelligence in the selected field of Zoology.](#)

Course outcome (should include one point for each unit of the paper)

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Prokaryotic and Eukaryotic cell, its cytoplasm, nucleus, chromosome, DNA & RNA.
- 2 Cell division, Cancer cells, Immunology basic idea of lymphoid, Antigen, Antibody.
- 3 Gen. characters and classification of Protozoa, Porifera.Coelentrata. Study of Paramecium, Sycon, Obelia
- 4 Gen. characters and classification of Patyhelminthese, Nemathehelminthese. Anilida & Arthropoda.Study of Fasiola, Ascaris, Pheretima & Palaemone.
- 5 Gen. characters and classification of Molluscs and Echinodermates. Study of Pila & Asterias

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Classification of Protochordata & Chordata. Animal study of Balanoglosses, Herdmania, Amphioxus. Petromyzon and Myxine
- 2 Skin, Scale, Migration and Parentalcare of fish. Parentalcare and Neoteny of Amphibia. Snake, Snake Venom. Extinct Reptiles
- 3 Flight, Migration and Perching mechanism of Birds.Mammals- Prototheria, Metatheria & Eutheria. Aquatic
- 4 Gametogenesis, Fertilization and parthenogenesis
- 5 Formation of three germs layer and Placenta of Mammals

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Comparative study of Integument, Digestive and Respiratory system.
- 2 Study of Endoskeleton, Circulatory & Urinogenital system
- 3 General plan of Brain, Spinal cord. Study of Ear & Eye. Gonads & Genital duct
- 4 Physiology of Digestion & Resliration, Cardiac cycle, ECG, Blood cougulation
- 5 Physiology of Excretory system, Nerve conduction, Role of Synaps & Neurotransmitter, Muscle Contraction

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Biosynthesis Receptor mechanism of Hormones and its Disorders
- 2 Reproductive cycle of Vertebrate, Menturation cycle, Lactation, Pregnancy, and mechanism of Parturation.Hormonal regulation of gamrtogenesis
- 3 Evidence of Evolution, Theories of Organic Evolution, Variation, Mutation, Isolation, Natural selection, and Evol
- 4 Ethology, pattern of Behavior, Taxes, Reflexes, Drives. Drugs & Behavior. Hormone & Behavior
- 5 Prawn, Seri, Api, Pesci,and Poultry Culture. Pest control-Chemical & Biological

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Ecology, Environmental Biology, Different Eco-system, Biological cycle and Air and Water pollution
- 2 Limiting factors, Food chain, Energy flow, Fresh water ecosystem,conservation of Nagural Resources and Environmental Impect Assesment
- 3 Classification of Toxident and its Impacts on Human, Snake, Scorpio and Bees Vennom. Food poisoning
- 4 Domestic & Sewage Microbiology. Microbiology of Milk and Milk product. Industrial microbiology
- 5 Medical microbiology - Pathogenic Protozons & Helminths

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Linkage, Gene expression - Multiple alleles, Mutation & Chromosomal Alteration
- 2 pH & Buffers, Transport across Membrane - Cell membrane, Mitochodria, Endoplasmic Reticulam, Active & Passive Transport mechanism, Hydralytic Enzyme.
- 3 Structure & Metabolism of Amino Acid, Peptide, Protein, Carbohydrate, and Lipids.
- 4 Recbinant DNA & Gene Cloning. Application of Biotechnology in Pharmacy & Food Procesing Industries
- 5 pH, Colorimeter, Centrifuge, Chromatography, Gel electrophoresis. Histochemical methods for determination of Protein , Lipid and Carbohydrate

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Chemo, Cyto & Molecular Taxonomy
- 2 Speciation & Biological Classification

- 3 International code of Zoological Nomenclature
- 4 Types of Hot spot and Treats. Conservation.

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Physiology of Digestion, Circulation & Respiration
- 2 Physiology of Nervous system, Muscle Contraction and Sensory Tranduction
- 3 Physiology of Excretion and Thermal regulation. Aims, Discovery and Scope of Endocrinology
- 4 Synthesis, Release, Transport, Receptor, Action mechanism and Metabolism of Hormone and Neuro-hormones. Function of Endocrine gland

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Orgnization of coelome and Locomotion.
- 2 Feeding, Digestion and Filter Feeding in Invertebrates. Respiration & Respiratory pigments
- 3 Excretory substance, excretion and osmoregulation in invertebrate
- 4 Invertebrate Larvae and Minor phyla

This paper enhance the knowledge of student in the following feilds of Zoology

- 1 Biomembrane, Mitochondria, Galgi Apparagus, Lysosome and Ribosome
- 2 DNA Replication, Transcription, and Translatiom
- 3 Genomic Organization & Molecular Mapping of Genome
- 4 Transgenic animals. Knockout gene. & Genetic engineering.

This paper enhance the knowledge of student in the following feilds of Zoology

1. Introduction to Digital Computer
2. Computer application of Word, Excel and Power Point. Computer application in Biostatistics.
3. Biological data. Representation of data. Central Tendency- Mean , Medium and Mode.
4. Chi - square test. Student t - test. Analysis of Variation, Correlation & Probability

This paper enhance the knowledge of student in the following feilds of Zoology

1. Sex Differentiation (Genetical, Gonadal, Phenotypic & Brain sex). Spermatogenesis & Oogenesis.
2. Fertilisation, Parturition and Hormonal Contraception.
3. Cleavage, Blastulation, Gastrulation, Fate map and Differentiation.
4. Cell and Tissue interaction in development. Metamorphosis & Teratology

This paper enhance the knowledge of student in the following feilds of Zoology

1. Organic Evolution - Lamarkism, Darwinism and synthetic theory of evolution. Evidences of Evolution
3. Isolation, Species & Speciation and gene evolution
4. Micro & Macro Evolution. Evolution of Horse, Eliphant, Camel & man

This paper enhance the knowledge of student in the following feilds of Zoology

1. Ultra Centifuge, Electrophorasis, Chromatography, colorimetry, Spectrophotometer & Flow Cytometry
2. Microscopy Light & Electrone
3. Chemical and Biological Assays in vivo & in vitro. Principal of Cytological & Cytochemical Technique.
4. Nucleic Acid Hybridization & Freeze Technique

This paper enhance the knowledge of student in the following feilds of Zoology

1. Classification of Amphibia, Reptile, Bird and Mammals
2. Study of Integuement and Skeletal System
3. Anatomy of Respiratory and Circulatory System. Study of Heart.
4. Central, Peripheral & Autonomic Nervous System. Sence organ and Sensory Receptors. Study of Urinogenital System

This paper enhance the knowledge of student in the following feilds of Zoology

1. Classification, Structure, Properties, Function and Metabolism of Protein
2. Classification, Structure, Properties, Function and Metabolism of Lipid & Carbohydrate and Utilisation of Krebs Cycle
3. Water & Fat Soluble Vitamin. Classification, Regulation and Mechanism of Enzyme Action and study of Co-
4. Nucleic Acid (Chemistry of DNA & RNA). Biological Importance and Metabolism of Nucleic Acid.

This paper enhance the knowledge of student in the following feilds of Zoology

1. Scope of Ecology and Ecosystem & its types and function
2. Energy flow, Food chain, Food web, & Ecological succession. Carbon, Oxygen, Nitrogen & Water Cycle
3. Population & Community Dynamics
4. Renewable & Non Renewable Resources, Forest, water and mineral resources. Conservation of Energy. National park and Wild Life Sanctuaries etc.

This paper enhance the knowledge of student in the following feilds of Zoology

1. Ethology, Pattern of Behaviour, Innete and Sterioscopic Behaviour. Biological Rhythms.
2. Communication, Lerning and Memory, Reasoning and Reproduction Behaviour
3. Birds & Fish Migration and Echolocation in Bats. Neural and Hormonal control of Behaviour
4. Social Behaviour. Hormonal effect on Behavioural Pattern

This paper enhance the knowledge of student in the following feilds of Zoology

1. Adoptation Mechanism
2. Adoptation in different Environment
3. Stress Physiology Concept
4. Stress Physiology in Different Condition.

This paper enhance the knowledge of student in the following feilds of Zoology

1. Immune system at the level of Cells and Organs.
2. Immunoglobulin Structure & Function and detail study of IgG, IgM, IgE, IgD Immunoglobulin class.
3. Antigen & Antigen - Antibody Interaction and knowledge about Vaccine
4. Viral, Bactereal & Helminths Infection and also enhance knowledge about AIDS and HIV

This paper enhance the knowledge of student in the following feilds of Zoology

1. Skin, Skeleton, and Fins of Fishes. Locomotion and Feeding habbits
2. Respiration & Accessory Respiratory organs of Fishes and information about Swim bladder and Weberian Ossicle. Heart and blood vascular system with the infomation about Excretion & Osmoregulation.
3. Nervous System and Sense organ in fishes with Sound producing organ and Electric organ. Reproduction & Development of Fishes.
4. Adoptation in fishes - Coloration, Deep sea, and Hillstream fishes. This unit gave information about Larvivorous & Exotic fishes. Fish Byproduct and Aquarium maintenance

This paper enhance the knowledge of student in the following feilds of Zoology

1. General charactors, Classification, Evolution & Phylogeny of Placoderm, Elasmobranchs, Holocephali, Dipnoi & Teleost Fishes
2. Fish culture in Fresh Water, Maintanance of Fish Farm and Transport of Fish Seeds & Brooders
3. **Composit Fish Culture. Sewage Fed Fish Culture, Prawn-Fish and Rice feild Fish Culture and Marine Fishries**
4. **Fish diseases- Viral, Bacterial and Helminth & Its treatments. Parasite of Fishes**

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