

Govt. Shrimant Madhavrao Scindia PG College, Shivpuri
Department of Zoology

Course Outcomes B.Sc. Zoology

Course outcomes – 1st year

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

Animal systematic and diversity and non chordates.

- 1- To understand the Zoological nomenclature- International code.
- 2- To understand about the lower and higher non-chordates.
- 3- To study Morphology and anatomy characters of non chordates.
- 4- To understand the various internal system like Digestive, Excretory, Respiratory and Reproductive system of non chordates with the help of chart and models.
- 5- To understand the economic importance of protozoan, annelid, arthropods and echinoderms.
- 6- To understand the economic importance of minor phyla.

Course outcomes – Ist year

Cell Biology Paper 2nd

- 1- To understand main Distinguish character of plant and animal cell.
- 2- To understand the whole cell organelles with their structure and function.
- 3- To understand the cell cycle and known the importance of various cells in body of organisms.
- 4- To understand the functions of nucleus.
- 5- To understand the different stages of developmental biology.
- 6- To study and understand of development of frog and chick.

Course Outcomes B.Sc. Zoology

Course outcomes – 2nd year

Vertebrates and evolution

- 1- To understand about the origin & systematic position of chordates.
- 2- To study external and internal characters of chordates.
- 3- To understand about comparative account of different system of vertebrates
- 4- To understand origin of life evidences and theory of organic evolution.
- 5- To understand Geological time cycle. Geographical distribution and methods and classification of animal distribution.
- 6- To study fossil, evolution of man and extinct forms like Dinosaurs and Archaeopteryx.

Course outcomes – 2nd year

Animal Physiology and bio chemistry

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 muscles contraction
6. To understand structure and function of different endocrine glands.

Course Outcomes B.Sc. Zoology

3rd years 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 Thalasemia.
7. To understand Recombination DNA technology, PCR, DNA, Finger printing and Gene therapy.

Course Outcomes B.Sc. Zoology

3rd year 2nd paper

Ecology and applied Zoology

1. To understand Concept of Ecology.
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 the economic importance of aquaculture.
6. To study Economic importance of entomology.
7. To study common Pest and biological control of insect pest.

M.Sc. Zoology

Course Outcomes 1st Semester

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

Biostatics and bioinformatics, research methodology

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

Structure function of invertebrates

1. To understand the various internal system of non chordates.
2. To study structure, affinities and life history of different minor phyla animals.

Tools and techniques of biology

1. To understand the applications of Graph and Histogram, Bar diagram and Pictogram Including application.

Cellular and molecular biology

1. To understand chemical foundation of biology like as PH, PK Acid base, buffers and Nano particles 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.

M.Sc. Zoology

Course Outcomes 2nd Semester

General and comparative animal physiology

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 environment biology

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.
3. To understand different Eco-physiological Adaptation and protection.
4. To understand Natural resource and their conservation, Radiation Ecology, Global Warming.
5. To understand physiological response to body exercise, Yoga and their effects.

Molecular cell biology and genetics

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.

M.Sc. Zoology

Course Outcomes 3rd Semester

Comparative anatomy of vertebrates

1. To understand origin evolution morphology and concept of proto chordates.
2. To understand comparative anatomy of digestive respiratory, circulatory and nervous system of vertebrates.
3. Evolutions 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

Fish structure function

1. To understand limnology Definition, historical development and scope of Limnology, Methods of water quality Bioindicators.
2. To study physio chemical characteristics Abiotic factors to study of biology aquatic flora & fauna pollution, aquatic resources & Their conservation.
3. To study of general principles of environmental communities of environment Ecosystem, environmental conservation.
4. To understand productivity production & analysis. recycling and reuse technology, remote sensing.
5. To study kinds of environmental pollution & their control method.

Fish morphology and anatomy

1. To understand Aquaculture – Husbandry, 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.

M.Sc. Zoology

Course Outcomes IV th Semester

Animal behavior

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

Embryonic development and hormones

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.

Pisciculture and economic importance of fish

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.