Department of Zoology

B.Sc Zoology: Course specific outcome

The main aim of B.Sc Zoology programme is to propagate students to post graduate programmes and high quality research in life science and allied subjects. Thorough knowledge about Non Chordata and Chordata, anatomy, physiology, taxonomy, evolution, biochemistry, molecular biology, bioinformatics, biostatistics enrich the students to excel in competitive examinations. Taxonomic studies provide skills for students to identify invertebrate and vertebrate groups. Basic practical knowledge provides interest among students to understand the basic concepts of life science. Project work undertaken during the course of study enables them to develop scientific writing skills and research aptitude. Field trips and study tours provide practical information about nature, wild life study and ecology. Seminars taken in each semester help students to attain self confidence and also to improve their presentation and communication skills.

Paper1.Course title: Animal diversity Non chordata Part I

Course code: Z01 B 01T

Credit hours: 36 hours.

CO1 General Identification of non chordates with suitable examples

CO2 Classification of coelenterates

CO3 Classification of Porifera

CO4 Classification of Cnidarians

CO5 Classification of Platyhelminths

CO6 Classification of Aschelminths

CO7 Type study of Paramecium and Obelia

CO8 Characteristics of protists, porifera, Cnidaria, platyhelminths and aschelminths

CO9 Reproduction in protozoa and parasitic protozoans of man

CO 10 Polymorphism in cnidarians

Paper 2.Course title: Animal diversity Non chordata Part II

Course code: ZOZB02 T

Credit hours: 36 hours

CO1 General Identification of non chordates

CO2 Classification of annelida

CO3 Classification of arthropoda

CO4 Classification of mollusca

CO5 Classification of echinodermata

CO6 Salient features of invertebrate groups

CO7 General characters of phylum annelida, arthropoda, mollusca and echinodermata

CO8 Study the importance and setting of vermiculture unit

CO9 Identification of larval stages of commercially important crustaceans and molluscs.

CO10 Detailed study of economic importance of insects

Paper III. Course title: Animal diversity Chordata Part I

Course code: Z03B03T

Credit hours: 54 hours

CO1 General characters of chordates

CO2 General characters of subphylum urochordata

CO3 General characters of subphylum cephalochordata

CO4 General characters of super class Pisces

CO5 General characters of class amphibia

CO6 General characters of class reptilia

CO7 Detailed study of fish migration and parental care in fishes

CO8 Study of accessory respiratory organs in fishes

CO9 Economic importance of fishes

CO10 Detailed study of ascidia, mullet and frog

Paper IV. Course title: Animal diversity Chordata Part II

Course code: ZO4B04T

Credit hours: 54 hours

CO1 General characters of class aves

CO2 General characters of class mammalia

CO3 General characters of super order palaeognathae

CO4 General characters of super order neognathidae

CO5 General characters of subclass prototheria

CO6 General characters of subclass theria

CO7 Study on endangered mammals of Kerala

CO8 Description on fight adaptation in birds

CO9 Detailed study on bird migration

CO10 Detailed study of Columba and Orytolagus

Paper V. Course title: Environmental biology, wild life conservation and toxicology

Course code: ZO5B06 T

Credit hours: 54 hours

CO1 General concepts of sampling

CO2 General concepts of ecological tools and techniques

CO3 Detailed study of ecosystem and energetics

CO4 Concept of biodiversity and hotspots

CO5 Basic concept of population and community ecology

CO6 Concept of sustainable development

CO7 Wild life conservation- acts and laws

CO8 Global

strategies for conservation

CO9 Detailed study of toxicants and public health hazards

CO10 Detailed study of environmental pollution

Paper VI. Course title: Ethology, evolution and zoogeography

Course code: ZO5B07T

Credit hours: 54 hours

CO1 Brief history scope and branches of ethology

CO2 Concept of biological rythms/ clocks

CO3 Detailed study of animal behaviour

CO4 Concept of inorganic and organic evolution

CO5 Experimental evidence for biochemical evolution of life

CO6 Detailed study of theories of evolution

CO7 Study of modern concepts of evolution

CO8 Concept of adaptive radiation

CO9 Evolution of modern man

CO10 Detailed study of zoogeographical realms

Paper VII. Course title: Cell biology and genetics

Course code: ZO 5B08T

Credit hours: 54 hours

CO1 Techniques and instruments in cell biology

CO2 Types of microscopy techniques

CO3 Detailed study of histological techniques

CO4 Techniques for demonstration of proteins

CO5 Detailed study of structure of eukaryotic cell.

CO6 Concept of multiple alleles, linkage and crossing over.

CO7 Sex determination mechanisms

CO8 Types of mutation

CO9 Detailed study of sex linked, sex influenced and sex limited characters

CO10 Detailed study of human genetics

Paper VIII. Course title: General methodology in science, biostatistics and informatics

Course code: ZO5B09 T

Credit hours: 54 hours

CO1 Concept of science and scientific studies

CO2 Types of hypothesis

CO3 Concept of experimental design

CO4 General concept of ethics in science

CO5 Classification and representation of scientific data

CO6 Measures of central tendency

CO7 Measures of dispersion

CO8 Concept of knowledge skills for higher education and research

CO9 IT- social issues and concerns

CO10 Application of IT in science education and research

Paper IX. Course title: Biochemistry

Course code: ZO6B10 T

Credit hours: 36 hours

CO1 Basic concepts in biochemistry

CO2 Structure, classification of carbohydrates

CO3 Structure, classification of aminoacids and proteins

CO4 Structure, classification of lipids

CO5 Structure, classification of enzymes and coenzymes

CO6 Structure, classification of nucleic acids

CO7 Detailed study on metabolism of carbohydrates, proteins and lipids

CO8 Importance of nucleic acids

CO9 Study on significance of TCA cycle

CO10 Structure of DNA

Paper X. Course title: Physiology and endocrinology

Course code: ZO6B11T

Credit hours: 54 hours

CO1 Concept of nutrition: importance, nutritional disorders

CO2 Detailed account of respiration

CO3 Detailed account of circulation

CO4 Detailed account of osmoregulation and excretion

CO5 Detailed account of muscle physiology

CO6 Detailed account of nerve physiology

CO7 Concepts of invertebrate and vertebrate endocrinology

CO8 Concepts of neurosecretion

CO9 Concepts of reproduction

CO10 Concepts of hormonal action

Paper XI. Course title: Molecular biology and bioinformatics

Course code: ZO0612T

Credit hours: 54 hours

CO1 Concept of gene

CO2 Detailed study of genetic code

CO3 Detailed study of protein synthesis

CO4 Concept of regulation of gene action

CO5 Concept of human genome project

CO6 General overview of bioinformatics

CO7 Types of database search engines

CO8 Classification of DNA and RNA

CO9 Application of bioinformatics

CO10 Ethical issues in bioinformatics

Paper XII. Course title: Reproductive biology, developmental biology and teratology

Course code: ZO0613T

Credit hours: 54 hours

CO1 General concept of reproductive system in human beings

CO2 Detailed account on reproductive technologies

CO3 Detailed account on assisted reproductive techniques

CO4 Methods in cryopreservation and embryo transfer

CO5 Theories in developmental biology

CO6 Concept of parthenogenesis

CO7 Detailed study of experimental embryology

CO8 Detailed study of development of human, frog and chick embryo

CO9 Cell differentiation and gene action during development

CO10 Environmental disruption of animal development

Paper XIII. Course title: Biotechnology, microbiology and immunology

Course code: ZO0614T

Credit hours: 54 hours

CO1 Definition and scope of biotechnology

CO2 Fundamental concepts of animal cell culture and hybridoma technology

CO3 General concepts in gene cloning and DNA sequencing

CO4 Account on transgenesis

CO5 Detailed study of molecular markers

CO6 Basic methods in microbiology

CO7General account on microorganisms in industry

CO8 General account on microorganisms in human diseases

CO9 Brief outline of immune system

CO10 Techniques in immunology

Paper XIV. Course title: Aquaculture, animal husbandry and poultry science

Elective paper

Course code: ZO0615T (E)

Credit hours: 54 hours

CO1 Introduction, scope and importance of aquaculture

CO2 Prawn culture: varities, breeding techniques, culture methods and processing methods

CO3 Pisciculture: induced spawning, steps in farming, preservation methods

CO4 Ornamental fish culture: common species, breeding techniques

CO5 Fishing gears, fish spoilage and preservation techniques

CO6 Fishery byproducts, and diseases

CO7 Different breeds of poultry

CO8 Poultry rearing methods, feeds and diseases

CO9 Breeds of cattle

CO10 Processing methods in diary science