



Sai College®

COURSE OUTCOMES

OF

BACHELORS OF SCIENCE

VISION

To inherit amongst the students the highest values of life, respect for Nature and to inculcate sound acquisition of knowledge of animal sciences through quality educational practices and research.

MISSION

- To sensitize human society for animal welfare, conservation and protection of biodiversity.
- To provide transformative, holistic and value-based immersive learning experiences to students.
- To bring about awareness regarding nature
- Help to solve different problems to establish sound and peaceful environment and life for community and society
- To produce leadership in science and technology to prepare responsible train manpower in animal sciences teaching and research
- To develop research aptitude and scientific advancement provide inexpensive educational service inspired to all the section of society to get expertise or skills at PG

Course Objectives

1. The study makes a huge impact on our world through the scientific study of the anatomy, physiology, behaviour, habitata and health of animal an humans.
2. The study of zoology makes a knowledge about the evolution of animals.
3. To understand about the conservation of environment and its important, protection of endangered species.
4. To knowledge about the agro based industries like Apiculture, sericulture, pisciculture etc.
5. Create awareness of the economic important and significance of invertebrates.

DEPARTMENT OF ZOOLOGY**SYLLABUS**

Paper	Name Of Paper
B.Sc. I	
Paper- I	Cell Biology and Non- Chordata
Paper- II	Chordata and Embryology
B.Sc. –II	
Paper- I	Anatomy & Physiology
Paper- II	Vertebrate Endocrinology, Reproductive Biology Behaviour, Evolution and Applied Zoology
B.Sc. III	
Paper –I	Ecology, Environmental-biology; Toxicology; Microbiology and Medical Zoology.
Paper-II	Genetic's, Cell Physiology, Biochemistry, Biotechnology and Biotechniques

Course Outcomes

At the end of this course, a student will have developed ability to:

Paper	Name of Paper	Course Outcome
B.Sc. I		
Paper I	Cell Biology and Non-Chordata	<p>CO-01:-To Introduce and understand the scope and importance of cell biology, study the whole-cell organelles their structure and function and organization of Nucleus, chromosomes, DNA and RNA</p> <p>CO-02:-To understand the cell division (Mitosis and Meiosis), study various applications of cells, types of tumor, elementary idea of Cancer cells and cell transformation. Develop an elementary idea about immunity.</p> <p>CO-03:-To understand the general characters and classifications of phylum protozoa, porifera, and coelenterata up to order and their structure, morphology and life cycle of protozoans</p> <p>CO-04:-To understand the general characters and classification of phylum platyhelminthes, nemathelminthes, annelida and arthropoda up to order and study their morphology and life cycle of selected species.</p> <p>CO-05:-To study the general characters and classifications of external and internal morphology of phylum mollusca with the help of animal Pila and Echinodermata up to order.</p>
		<p>CO-01:-To understand the various aspects of Classificatio and features of hemichordates, protochordates and to study the comparative account of Petromyzon and Myxin.</p> <p>CO-02:- To be familiar with the features</p>

Paper II	Chordata and Embryology	<p>and structure of vertebrates, gain knowledge on migration in fishes, amphibian its parental care and behaviour, differentiate poisonous & non-poisonous snakes and also able to understand the extinct reptiles.</p> <p>CO-03: To understand and gain the knowledge about birds, their flight adaptation, migration, and perching mechanism and comparative studies of prototheria, metatheria eutheria and their affinities.</p> <p>CO-04: To understand the principles and process of gametogenesis, fertilization and cleavage, to know the development of frog up to the formation of three germinal layers.</p> <p>CO-05:- To know the process of embryonic induction, their differentiation, regeneration and development of the chicks and features of extra-embryonic membranes.</p>
Lab course		<ol style="list-style-type: none"> 1. To study and understand the internal and external features of Earthworm, Cockroach, Palaemon and Pila. 2. To know the structure of appendages of Prawn & hastate plate, mouthparts of insects and radula of Pila. 3. To understand the morphology and arrangement of various systems of selected species through alternative methods such as clay/thermacol/drawing/Model etc.) 4. To study the adaptive characters of aquatic, terrestrial, aerial and desert animals. 5. To understand the features of invertebrates with the help of museum specimens. 6. To study the morphology of Invertebrates, frog embryology, chick embryology and cytology with the help of slides.
B.Sc. II		

<p>Paper – I</p>	<p>Anatomy & Physiology</p>	<p>CO:-01 To familiarize with the comparative anatomy of various organ systems, alimentary canal, digestive gland respiratory organs, gills, lungs and air-sac in birds of vertebrates, structure of scales, hair and feathers.</p> <p>CO-02:-To understand the endoskeleton, circulatory system, evolution of hearts , aortic arches and the features of urinogenital System of vertebrate</p> <p>CO-03:-To study and understand the nervous system, classification and histology of endocrine glands, know the structure, functions of gonads and genital ducts.</p> <p>CO-04:- To understand the process of digestion and absorption of dietary components and to know the physiology of heart, mechanism of respiration and control of breathing.</p> <p>CO-05:-To comprehend the physiology of excretion, osmo-regulation, muscle contractions, nerve impulse, synaptic transmission, ear and eye.</p>
<p>Paper-II</p>	<p>Vertebrate Endocrinology, Reproductive Biology Behaviour, Evolution and Applied Zoology</p>	<p>CO-01:- To know the general characters of hormones, hormone receptors, various aspects of biosynthesis and secretion of the thyroid, adrenal ovarian and testicular hormones and endocrine disorders.</p> <p>CO-02:- To appreciates the basic concepts of reproductive cycle in vertebrate, menstruation, lactation and pregnancy, mechanism of parturition, hormonal regulation of gametogenesis.</p> <p>CO-03:- To understand the evidence of organic evolution in vertebrates and their</p>

		<p>theories of variations, mutations, isolation and natural selection.</p> <p>CO -04:-To know and understand the various aspects of ethology, patterns of behaviour taxes, reflexes, drives and stereotyped behaviour, reproductive behavioural patterns, hormones and drugs.</p> <p>CO-05 :-To know the importance of aquaculture, sericulture, apiculture, pisciculture and poultry keeping, methods and features of pest control.</p>
Lab course		<p>CO-01. To study and understand the classification and characters of the different chordates with the help of representative examples.</p> <p>CO-02. To understand the morphology of afferent and afferent branchial vessels, cranial nerves and internal ear of Scoliodon by dissection.</p> <p>CO-03. To study the simple microscopic technique through unstained or stained permanent mounts.</p> <p>CO-04. To Study and understand the prepared histological slides, as per theory papers.</p> <p>CO-05. To understand the structure of limb girdles and vertebrae of frog, Varanus, fowl and Rabbit.</p> <p>CO-06. To identify species and individuals of honey bees.</p> <p>CO-07. To understand the Life cycle of honey bee and silkworm.</p>
B.Sc. Part III		
Paper-I	Ecology, Environmental-biology; Toxicology;	CO-01:- (Ecology): To know the aims and scopes of ecology, understand the methods of regulation of population densities,

	Microbiology and Medical Zoology.	<p>familiarize with the communities and ecosystems, the impacts of air and water pollutions and various stages of ecological succession.</p> <p>CO -02:- (Environmental Biology): To study and understand the laws of limiting factors, food chain, energy flow in ecosystem, to know the importance of conservation of natural resources.</p> <p>CO-03: (Toxicology):To know the field of toxicology, their classifications and to understand various kind of animal poisons and food poisoning.</p> <p>CO -04: (Microbiology):To understand the scopes of microbiology of domestic water, sewage, milk and milk products and to familiarize with the area of industrial microbiology.</p> <p>CO -05: (Medical Microbiology): To know the pathogenic micro-organisms their life-history and pathogenicity of the protozoans, helminths, nematode pathogenic parasites and vector insects with reference to man and treatment.</p>
Paper-II	Genetic's, Cell Physiology, Biochemistry, Biotechnology and Biotechniques)	<p>CO-01 : -(Genetic's): To understand linkage and linkage maps, to know the varieties of gene expression, understand mutation, human genetics – chromosomal and single-gene disorders</p> <p>CO-02:- (Cell Physiology):To get a general idea about pH and Buffer, understand the structure and natures of cell membrane, mitochondria and endoplasmic reticulum and hydrolytic enzymes</p> <p>CO-03 :- (Biochemistry):To understand the structure and biological functions of amino</p>

		<p>acid, Carbohydrate, lipid metabolism, protein metabolism and biosynthesis of protein.</p> <p>CO-04:- (Biotechnology):To understand the scope and importance of biotechnology, recombinant DNA technology, gene cloning techniques, applications of pharmaceutical industry and food processing industry.</p> <p>CO-05:- (Biotechnology): To study and understand the working principles and techniques of pH meter, colorimeter, microscopes, Centrifugation, chromatography and electrophoresis, and histo-chemical methods.</p>
Lab course		<p>CO-01. To estimate the population density, percentage frequency and relative density.</p> <p>CO-02. To study the producers and consumers in grassland.</p> <p>CO-03. To detect gram-negative and gram-positive bacteria.</p> <p>CO-04. To study the various haematological experiments (blood grouping, Blood coagulation time, R.B.C and W.B.C counting and Preparation of Hematin crystals from the blood of rat).</p> <p>CO-05. To study Drosophila, wild and mutant through various experiments.</p> <p>CO-06. To understand the features of Chromatography (Paper or gel).</p> <p>CO-07. To understand the Colorimetric estimation of haemoglobin.</p> <p>CO-08. To understand the processes in Mitosis with the aid of onion root tip.</p> <p>CO-09. To know the methods of Biochemical detection of Carbohydrate, Protein and Lipid.</p>

		<p>CO-10. To understand the parasites using permanent slides based on theory paper.</p> <p>CO-11. To know the working principles of pH meter, colorimeter, centrifuge and microscopes.</p>
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