PROGRAMME SPECIFIC OUTCOMES, PROGRAM OUTCOMES AND COURSE OUT COMES
PG DEPARTMENT OF ZOOLOGY - B.Sc., ZOOLOGY, M.Sc., ZOOLOGY
EXTRA-CREDIT COURSES AND VALUE-ADDED COURSES - 2019- 2022

B.Sc., ZOOLOGY	
PSO's	**Program specific out come**
PSO1	Graduates of the program will develop a strong and competent knowledge in basic biological science required for critical learning and research.
PSO2	Graduates will develop diversified basic professional skills through various laboratory technical training, communicational and presentation skills.
PSO3	Graduates will possess an ability to identify, formulate, and solve biological problems to contribute to service efforts to communicate in both the professional and private realm.
PSO4	Graduates will integrate related topics from separate parts of the course such as levels of organization, cell biology, ecology, evolution, biochemistry, genetics, embryology, basic biotechnology, physiology, molecular biology for successful career.
PO's	**PROGRAMME OUTCOMES**
PO1	Develop a broad fundamental knowledge of the animal diversity especially local fauna pattern of evolution, morphology, adaptations, and classification.
PO2	Analyze the relationship between plants, animals, microbes, and deal with the deal with the local national global environment issues by realizing the right of the individuals and also need to conserve our biosphere.
PO3	Understand how organisms' function at the level of gene, genome, cell tissue, organs, organ system, drawing upon this knowledge, they are able to give specific examples of the physiological adaptations developed, reproduction and behavior of different forms of life.
PO4	Gain knowledge about the application of biological sciences in aquaculture, apiculture, vermiculture, poultry farming, pest management, there by impart skill as well a source of income and self-employment.
PO5	Generate innovative ideas for performing experiments in the areas of biochemistry, physiology, genetics, microbiology, Developmental biology, Bioinformatics, Biostatistics, anatomy, taxonomy, economic zoology, and ecology.
PO6	Explain the recent developments in genetic engineering, biotechnology, immunology, informatics, for research activities in the department or in collaboration with other research institutions.
PO7	Organize and deliver relevant applications of knowledge through effective written verbal, graphical/virtual communications and interact with people from diverse background.

CO's	COURSE OUTCOMES Description of CO's	Blooms taxonomy Cognitive domain
	CORE I: INVERTEBRATA I	
CO1	Describe common and distinctive features of invertebrate organisms including protozoans, Porifera, Coelenterates, Platyhelminthes, and annelids.	K1 / Knowledge = Remember
CO2	Explain phylogenetic relationships between the phyla covered.	K2/ Comprehension = Understand
CO3	Discuss important concepts in invertebrate organization including body symmetry, body cavity and segmentation.	K3 / Application = Apply
CO4	Describe important biological processes in invertebrates.	K4 / Analysis = Analyze
CO5	Gain knowledge about locomotion, body support, feeding and digestion, excretion and osmoregulation, respiration, circulation, sensory perception and behavior reproduction and development.	K5 / Evaluation = Evaluate
	CORE II: INVERTEBRATA II	
CO1	Understood the Classification and General characteristics Phylogeny of Invertebrates.	K1 / Knowledge = Remember
CO2	To explain general characters of Arthropoda and metamorphosis and economic importance of insects.	K2/ Comprehension = Understand
CO3	To study the external as well as internal characters of non-chordates.	K2/ Comprehension = Understand
CO4	Described the general biology of few selected non-chordates which are useful to mankind.	K3 / Application = Apply
CO5	Enriched knowledge on some importance of Mollusca and Echinodermata.	K3 / Application = Apply
	ANCILLARY ZOOLOGY PAPER I: ANIMAL DIVERSITY & GENETICS	
CO1	Familiarized with the classification and identification of animals.	K1 / Knowledge = Remember
CO2	External and internal features of the organisms will be remembered.	K2/ Comprehension = Understand
CO3	Execute the animal behavior in biosphere conservation.	K3 / Application = Apply
CO4	Understand the Concept of human genetics.	K4 / Analysis = Analyze
CO5	To study the fundamental concepts of genetics.	K5 / Evaluation = Evaluate
	SBC I:-APICULTURE	
CO1	Gain knowledge about steps involved in bee keeping.	K1 / Knowledge = Remember
CO2	Comprehend innovative ideas to flourish economically.	K2/ Comprehension = Understand
CO3	To produce value added products from the byproducts.	K3 / Application = Apply

CO4	To overcome the practical difficulties in apiculture.	K4 / Analysis = Analyze
CO5	To learn techniques to commercialize the byproducts of bee keeping.	K5 / Evaluation = Evaluate
CORE III: CHORDATA		
CO1	Portray the origin and ancestry of chordates and basic principles of chordate classification.	K1 / Knowledge = Remember
CO2	Gain knowledge on fundamental chordate characters.	K2/ Comprehension = Understand
CO3	Understand interrelationship of primitive pro-chordates with invertebrates and vertebrates.	K3 / Application = Apply
CO4	Gain knowledge on fishes and their migration.	K4 / Analysis = Analyze
CO5	To understand the economic importance of higher animals.	K5 / Evaluation = Evaluate
CORE PRACTICAL-I - INVERTEBRATE & CHORDATA		
CO1	Able to dissect and examine various organ systems *in situ.*	K1 / Knowledge = Remember
CO2	Preserving the animals for examination.	K2/ Comprehension = Understand
CO3	Acquire basic skills in animal dissections.	K3 / Application = Apply
CO4	Be familiar with the external morphology of animals.	K4 / Analysis = Analyze
CO5	To know their salient features by observing the animals.	K5 / Evaluation = Evaluate
ANCILLARY ZOOLOGY PAPER- II ANIMAL PHYSIOLOGY, IMMUNOLOGY, EVOLUTION & DEVELOPMENTAL BIOLOGY		
CO1	Advanced concepts of zoology will be understood in higher studies.	K1 / Knowledge = Remember
CO2	Basic human physiology will be recognizable.	K2/ Comprehension = Understand
CO3	Apprehend the concept of evolution.	K3 / Application = Apply
CO4	To comprehend embryo formation and developmental stages of animals.	K4 / Analysis = Analyze
CO5	To understand the concept of evolution.	K5 / Evaluation = Evaluate

ANCILLARY ZOOLOGY PRACTICAL - I ANIMAL DIVERSITY, GENETICS, ANIMAL PHYSIOLOGY, IMMUNOLOGY, EVOLUTION & DEVELOPMENTAL BIOLOGY		
CO1	To remember and distinguish animals with their morphology and anatomy.	K3 / Application = Apply
CO2	Experimental knowledge on developmental aspects.	K4 / Analysis = Analyze
CO3	Practical understanding of subject.	K5 / Evaluation = Evaluate
CO4	To know about the microscopic and macroscopic concept of developmental biology.	K5 / Evaluation = Evaluate
CO5	Understand the Evolutionary concept.	K4 / Analysis = Analyze
SBC II -POULTRY FARMING		
CO1	To provide a learning environment for indigenous poultry birds.	K1 / Knowledge = Remember
CO2	Gives knowledge of broilers and layers rearing.	K3 / Application = Apply
CO3	To give a knowledge about the cage system and Deep litter system.	K3 / Application = Apply
CO4	Knowledge about bacterial and viral diseases associated with poultry farming.	K4 / Analysis = Analyze
CO5	It is an agro based cottage industry in India that enables them to get self-employment.	K4 / Analysis = Analyze
CORE IV - DEVELOPMENTAL BIOLOGY		
CO1	Acquaint with the theories of Developmental Biology.	K1 / Knowledge = Remember
CO2	Gain in-depth knowledge in the developmental stages of Embryogenesis.	K2/ Comprehension = Understand
CO3	Comprehend the process of organogenesis.	K2/ Comprehension = Understand
CO4	Acquire better understanding of scientific reasoning exhibited in experimental life Science.	K3 / Application = Apply K5 / Evaluation = Evaluate
CO5	Have an Enhanced knowledge and appreciation of life cycle transitions like Metamorphosis and Regeneration.	K3 / Application = Apply K4 / Analysis = Analyze
NME I-SERICULTURE		
CO1	Identifying and knowing the importance of silkworm.	K1 / Knowledge = Remember
CO2	Comprehending the methodologies involved in silkworm rearing.	K2/ Comprehension = Understand
CO3	Executing self-employment in sericulture.	K3 / Application = Apply
CO4	Validating different rearing techniques and its by-products.	K4 / Analysis = Analyze
CO5	Understanding and controlling the diseases of silkworm.	K5 / Evaluation = Evaluate

SBC III-VERMICULTURE		
CO1	To analyze the role of earthworm in organic farming.	K1 / Knowledge = Remember
CO2	Environmental protection through solid waste management.	K2/ Comprehension = Understand
CO3	Adopt new techniques in maintaining soil health.	K3 / Application = Apply
CO4	Deploy vermitechnology for sustainable agriculture	K4 / Analysis = Analyze
CO5	To understand primary, secondary degradation and vermibed preparation.	K5 / Evaluation = Evaluate
CORE IV - GENETICS		
CO1	Acquaint with genetic Terminologies and Mendelian inheritance.	K1 / Knowledge = Remember
CO2	Sort out gene interactions in man and animals.	K2/ Comprehension = Understand
CO3	Learn the concepts of Linkage and Crossing over.	K3 / Application = Apply
CO4	Analyze the hereditary disorders.	K3 / Application = Apply K4 / Analysis = Analyze
CO5	Apply the laws of genetics for future welfare of mankind.	K3 / Application = Apply K4 / Analysis = Analyze
CORE VI -BIOSTATISTICS & BIOINFORMATICS		
CO1	Understand the basic concept and application of biostatistics and bioinformatics.	K1 / Knowledge = Remember
CO2	Know about the methods of data collection and techniques of sampling.	K2/ Comprehension = Understand
CO3	Understand the process of classification and tabulation of data.	K3 / Application = Apply
CO4	Know about the diagrammatic and graphic presentation of data, measures of central tendency and dispersion.	K4 / Analysis = Analyze
CO5	To communicate the results of statistical analysis accurately and effectively.	K5 / Evaluation = Evaluate
CORE PRACTICAL II- DEVELOPMENTAL BIOLOGY, GENETICS, BIOSTATISTICS & BIOINFORMATICS		
CO1	To understand the Mendelian Laws through Experiments.	K3 / Application = Apply
CO2	To identify the developmental stages of Frog and Chick.	K4 / Analysis = Analyze
CO3	To acquaint with Biological Data Bases.	K5 / Evaluation = Evaluate

SBC IV -SERICULTURE		
CO1	Identify and know the importance of silkworm.	K1 / Knowledge = Remember
CO2	Comprehend the methodologies involved in silkworm rearing.	K2/ Comprehension = Understand
CO3	Execute self-employment in sericulture.	K3 / Application = Apply
CO4	Validate different rearing techniques and it's by products.	K4 / Analysis = Analyze
CO5	Understand and control the diseases of silkworm.	K5 / Evaluation = Evaluate
CORE VII - BIOCHEMISTRY		
CO1	To gain basic knowledge about various bio molecules and their role in metabolism.	K1 / Knowledge = Remember
CO2	Metabolism of carbohydrates, Protein and Lipid.	K2/ Comprehension = Understand
CO3	Classification of Enzymes and Hormones.	K2/ Comprehension = Understand
CO4	Understand the chemical nature of life and life process.	K2/ Comprehension = Understand
CO5	Enable the students to illustrate various Biochemical pathways.	K5 / Evaluation = Evaluate
CORE VIII - CELL & MOLECULAR BIOLOGY		
CO1	Understand different types of microscopic techniques and sample processing to label and identify sub cellular structures in fixed and live cells.	K1 / Knowledge = Remember
CO2	Portray the intricate relationship between various cellular structures and their corresponding functions.	K2/ Comprehension = Understand
CO3	Be familiar with the external morphology of animals.	K3 / Application = Apply
CO4	Be able to describe the structure and functions of nucleus with reference to special chromosomes.	K4 / Analysis = Analyze
CO5	March towards the fundamental functional status.	K5 / Evaluation = Evaluate
ELECTIVE I -IMMUNOLOGY		
CO1	Enable the students to understand the basic concepts of defense mechanisms.	K1 / Knowledge = Remember K2/ Comprehension = Understand
CO2	Understand the basic principle and mechanism involved in antigen antibody reactions.	K1 / Knowledge = Remember K2/ Comprehension =

		Understand
CO3	Acquire knowledge about lymphoid organs and their importance.	K2/ Comprehension = Understand K4 / Analysis = Analyze
CO4	Recognize the significance of immune system in transplantation of organs.	K3 / Application = Apply K5 / Evaluation = Evaluate
CO5	Gain knowledge about tumor, Autoimmune and immune deficiency diseases.	K3 / Application = Apply K4 / Analysis = Analyze
ELECTIVE I- MEDICAL DIAGNOSTICS		
CO1	To study about the blood cell organelle.	K1 / Knowledge = Remember
CO2	Technically adapted to diagnosis diseases.	K2/ Comprehension = Understand
CO3	To acquire knowledge about diseases.	K3 / Application = Apply
CO4	Get well versed in clinical laboratory techniques.	K4 / Analysis = Analyze
CO5	To learn about the disease preventive measures.	K5 / Evaluation = Evaluate
ELECTIVE II -MICROBIOLOGY		
CO1	To gain knowledge about the microbial diversity.	K1 / Knowledge = Remember
CO2	To sort cellular organisms and their biological activities.	K2/ Comprehension = Understand
CO3	To apply microbial metabolism in industrial production.	K3 / Application = Apply
CO4	Scope to apply the microbes in environmental waste management.	K4 / Analysis = Analyze
CO5	To gain knowledge about food preservation.	K5 / Evaluation = Evaluate
ELECTIVE II -MEDICAL TRANSCRIPTION		
CO1	To gain basic knowledge about software for transcription.	K1 / Knowledge = Remember
CO2	To learn about human anatomy.	K2/ Comprehension = Understand
CO3	To study the basics of computer.	K3 / Application = Apply
CO4	Enable the students to understand human life process.	K4 / Analysis = Analyze
CO5	To illustrate various surgical process.	K5 / Evaluation = Evaluate

SBC V- ORNAMENTAL FISH CULTURE		
CO1	To popularize with the ornamental fishes.	K1 / Knowledge = Remember
CO2	To apply modern methods on aquarium culture.	K2/ Comprehension = Understand
CO3	To learn technique to overcome fish diseases.	K2/ Comprehension = Understand
CO4	To maintain natural habitat of fishes.	K2/ Comprehension = Understand
CO5	To gain knowledge on aquarium fishes.	K5 / Evaluation = Evaluate
CORE IX -ANIMAL PHYSIOLOGY		
CO1	Seeks to understand the mechanisms that work to keep the human body alive and functioning.	K1 / Knowledge = Remember
CO2	Students are taught the detailed concepts of Digestion, Respiration, Excretion the functioning of Nerves and Muscles.	K2/ Comprehension = Understand
CO3	Imparts knowledge about various metabolic and physiological mechanisms of the human body.	K2/ Comprehension = Understand
CO4	Understands about neurophysiology, Receptors and Hormones.	K2/ Comprehension = Understand
CO5	Students gain fundamental knowledge of Animal Physiology.	K5 / Evaluation = Evaluate
CORE X- BIOTECHNOLOGY		
CO1	Know about the tools and methods of Cloning by using Bio techniques.	K1 / Knowledge = Remember
CO2	Know about the tools and methods of Cloning by using Bio techniques.	K3 / Application = Apply K6 / Synthesis = Create
CO3	Elucidate transgenic animals and their importance.	K2/ Comprehension = Understand K3 / Application = Apply
CO4	Acquire knowledge on tissue culture and IVF technology and learn the fundamentals of patenting of biological products.	K3 / Application = Apply K4 / Analysis = Analyze
CO5	Familiar with microbial degradation of Xenobiotics, Bioremediation, Bio leaching process.	K3 / Application = Apply K6 / Synthesis = Create

CORE PRACTICAL III BIOCHEMISTRY &CELL & MOLECULAR BIOLOGY		
CO1	The biochemical understanding through scientific enquiry into the nature of mechanical, physical and biochemical functions of humans, their enzymes, and the cells of which they are composed.	K3 / Application = Apply
CO2	Students gain knowledge about various tools and techniques used in biological systems.	K4 / Analysis = Analyze
CO3	Understand the process of mitotic and meiotic cell division.	K5 / Evaluation = Evaluate
CO4	Gain knowledge about cell and cell organelles.	K5 / Evaluation = Evaluate
CO5	To give an insight about biochemistry and cell organelles in research.	K5 / Evaluation = Evaluate
CORE PRACTICAL III - ANIMAL PHYSIOLOGY & BIOTECHNOLOGY		
CO1	Impart knowledge about various metabolic and physiological mechanism of animals.	K3 / Application = Apply
CO2	Students gain fundamental knowledge of Physiological Process like Thermoregulation and Excretion.	K4 / Analysis = Analyze
CO3	To understand and gain knowledge about r-DNA.	K4 / Analysis = Analyze
CO4	Apply their knowledge in the production and application of human health care products.	K5 / Evaluation = Evaluate
ELECTIVE III - EVOLUTION		
CO1	Enable the students to understand the evolution of universe and life.	K1 / Knowledge = Remember
CO2	Knowledge of eras and evolution of species.	K2/ Comprehension = Understand
CO3	Understanding of Hybridization, Natural selection and Speciation.	K2/ Comprehension = Understand
CO4	Knowledge on principles of inheritance and variation.	K2/ Comprehension = Understand
CO5	Develop an interest in the debates and discussion taking place in the field of evolution of Man.	K3 / Application = Apply
ELECTIVE III - ENTOMOLOGY		
CO1	To interpret application of pesticide.	K1 / Knowledge = Remember
CO2	To get knowledge about the pest control management.	K2/ Comprehension = Understand
CO3	To understand the control of pest management.	K2/ Comprehension = Understand
CO4	To remember agricultural pest and their management.	K1 / Knowledge = Remember

CO5	To apply modern methods in agricultural field.	K4 / Analysis = Analyze
SBC VI - GROUP PROJECT		
CO1	Make research proposal.	K3 / Application = Apply
CO2	Construct tool of data collection.	K4 / Analysis = Analyze
CO3	Learn fieldwork modalities.	K5 / Evaluation = Evaluate
CO4	Understand the process of data analysis.	K6 / Synthesis = Create
CO5	Writing research report.	K6 / Synthesis = Create
NME II : HUMAN REPRODUCTIVE BIOLOGY		
CO1	To know about the structure and functions of the reproductive system.	K1 / Knowledge = Remember
CO2	To Knowledge about development, process of puberty and childbirth.	K2/ Comprehension = Understand
CO3	To understanding of the hormonal control of reproduction.	K2/ Comprehension = Understand
CO4	Knowledge about sexually transmitted diseases may contribute to altered neonatal or reproductive system.	K1 / Knowledge = Remember
CO5	To understand the principles and compare the contrast technique used to overcome infertility.	K4 / Analysis = Analyze
EXTRA CREDIT PAPER I - INSECT PEST MANAGEMENT		
CO1	To acquire knowledge about agricultural pest.	K3 / Application = Apply
CO2	To interpret the application of pesticides.	K4 / Analysis = Analyze
CO3	To understand the pest management.	K5 / Evaluation = Evaluate
CO4	Apply modern methods of pest control.	K6 / Synthesis = Create
CO5	To know about the insect species of agriculture field.	K6 / Synthesis = Create
EXTRA CREDIT PAPER II - COMMUNICABLE DISEASES AND MANAGEMENT		
CO1	To create Health Awareness to the people.	K1 / Knowledge = Remember
CO2	To understand the causative agents for the Communicable disease.	K2/ Comprehension = Understand
CO3	To discuss the importance of Vaccines.	K3 / Application = Apply
CO4	To know about the Health Care services in India.	K4 / Analysis = Analyze

EXTRA CREDIT PAPER III - HEALTH & HYGIENE		
CO1	To develop a knowledge about the Health awareness.	K2/ Comprehension = Understand
CO2	To know the importance of health and hygiene for the society.	K3 / Application = Apply
CO3	To implement the Pollution free environment.	K4 / Analysis = Analyze
CO4	To discuss the importance of Immunization.	K5 / Evaluation = Evaluate
VALUE ADDED COURSE I - DAIRY FARMING		
CO1	Gaining knowledge of dairy farming and new techniques adopted for cattle breeding.	K1 / Knowledge = Remember
CO2	Comprehending various dairy breeds and their importance.	K2/ Comprehension = Understand
CO3	Applying the gained knowledge in the preparation of cattle feed and their nutritive values.	K3 / Application = Apply
CO4	Analyzing the composition and nutritive value of milk and pasteurization of milk and milk products.	K4 / Analysis = Analyze
CO5	Becoming an entrepreneur by creating a startup.	K6 synthesis= Create
VALUE ADDED COURSE II - HEALTH AND HYGIENE		
CO1	Gaining in depth knowledge of balanced diet and therapeutic diet.	K1 / Knowledge = Remember
CO2	Gaining knowledge of symptoms of microbial diseases and dietary management.	K1 / Knowledge = Remember
CO3	Comprehending obesity weight management and nutritional deficiency disorders.	K2/ Comprehension = Understand
CO4	Idolizing the impact of diabetes and dietary management.	K4 / Analysis = Analyze
CO5	Analyzing the impact of gastrointestinal diseases control measures and dietary management.	K4 / Analysis = Analyze
VALUE ADDED COURSE III - CLINICAL NUTRITION		
CO1	Gaining knowledge of the preparation of laboratory reagents.	K1 / Knowledge = Remember
CO2	Gaining knowledge of the methods of examination of parasites in the biological samples.	K1 / Knowledge = Remember
CO3	Comprehending the maintenance of laboratory equipment's.	K2/ Comprehension = Understand
CO4	Comprehending the methodologies involved in analyzing microbial examinations of urine and faeces.	K2/ Comprehension = Understand
CO5	Adopting applying new techniques for various cell count in the blood samples.	K3 / Application = Apply

M.Sc., Zoology		
	PROGRAMMES OUTCOMES	
POs	**Description of POs**	
PO1	Relevant knowledge of core concept, principles, themes, terminology and classified system in the biology and microbiology disciplines covered in Zoology	
PO2	Scientific explanation for the unity and diversity of life, genetical and heredity concepts of life in the earth and analyze this with developmental stages of animal with copious examples.	
PO3	Keen awareness about the environment, ecological balance and clean green concepts and develop empathy and love towards the society.	
PO4	Quantitative, qualitative analysis and interpretation of biological data synthesis of information from the database.	
PO5	Skills in designing and carryout the research projects using appropriate biological techniques and approaches	
PO6	Clear knowledge about the function of physiological system of animals at cell and molecular level and their biological concepts.	
PO7	Gain knowledge of agro based small scale industries like sericulture, fish farming, poultry farming and vermicompost production to aim at self-reliance.	
CORE I -BIOLOGICAL CHEMISTRY		
CO1	To understand the structural organization and functions of biomolecules.	K2 Comprehension
CO2	Explained the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.	K2 Comprehension
CO3	To understand the principles of bioenergetics and enzyme catalysis.	K3 Application = Apply
CO4	Explained how the metabolism of organic compounds leads ultimately to the generation of large quantities of ATP.	K4 Analysis = Analyze
CO5	Understood types, Structure, biochemical properties, and functions of hormones.	K5 Evaluation = Evaluate

CORE II -CELL BIOLOGY		
CO1	Understand techniques of microscopes.	K2 Comprehension
CO2	Learn the structure and functions of cell organelles.	K2 Comprehension
CO3	Understand the role of membranes in cell communication.	K3 Application = Apply
CO4	Know about gene organization, expression & regulation.	K4 Analysis = Analyze
CO5	To know about gene organization, expression & regulation.	K4 Analysis = Analyze
CORE III -MICROBIOLOGY		
CO1	To compare the traditional and modern microbiological techniques.	K2 Comprehension
CO2	Apply the knowledge of microbial industry in crop improvement.	K3 Application = Apply
CO3	To differentiate between beneficial and harmful microorganism	K3 Application = Apply
CO4	Gain knowledge in isolation and identification of microbes.	K4 Analysis = Analyze
CO5	Exploit microorganism in food production.	K5 Evaluation = Evaluate
CORE PRACTICAL I -BIOLOGICAL CHEMISTRY, CELL BIOLOGY AND MICROBIOLOGY		
CO1	To comprehend the methodologies of biochemistry.	K3 Application = Apply
CO2	To apply modern tools in cell and molecular analysis.	K3 Application = Apply
CO3	To validate metabolic and microbial studies	K3 Application = Apply
CO4	To interpret the applications of biological analysis	K4 Analysis = Analyze
CO5	To remember the biochemical activity at cellular level.	K5 Evaluation = Evaluate
ELECTIVE I -BIOINSTRUMENTATION		
CO1	To know the importance of instruments in biology.	K2 Comprehension
CO2	To provide information about principles and applications of instruments.	K3 Application = Apply
CO3	To learn the procedure and protocol of various techniques.	K3 Application = Apply
CO4	To acquire theoretical knowledge about research methodology.	K4 Analysis = Analyze
CO5	To enable the students to prepare project manuscript.	K5 Evaluation = Evaluate
ELECTIVE I ORNAMENTAL FISH CULTURE		
CO1	To study the various ornamental fishes and its culture	K2 Comprehension
CO2	To recollect the general ornamental fishes	K3 Application = Apply
CO3	To understand the scope of fish culture	K3 Application = Apply
CO4	To apply the ornamental fish culture methods for aquarium maintenance	K4 Analysis = Analyze
CO5	To review the different types of cultural methods	K5 Evaluation = Evaluate

CORE IV -DEVELOPMENTAL BIOLOGY		
CO1	Acquaint with the theories of Developmental Biology.	K1 Knowledge = Remember
CO2	Gain in-depth knowledge in the developmental stages of Embryogenesis.	K2 Comprehension
CO3	Understand the Embryological process of different Organisms.	K2 Comprehension
CO4	Comprehend the process of organogenesis.	K2 Comprehension
CO5	Acquire better understanding of scientific reasoning exhibited in experimental life science.	K3 Application = Apply, K5 Evaluation = Evaluate
CO6	Have an enhanced knowledge and appreciation of life cycle transitions like Metamorphosis and Regeneration.	K3 Application = Apply, K4 Analysis = Analyze
CORE V- ENVIRONMENTAL BIOLOGY AND BIODIVERSITY		
CO1	Understand the various factors of environment.	K2 Comprehension
CO2	Learn the effects of population and its control measures.	K2 Comprehension
CO3	Know about resources of energy.	K3 Application = Apply
CO4	Understand environmental pollution and disaster and management.	K4 Analysis = Analyze
CO5	To enable the students to understand the various factors of environment.	K4 Analysis = Analyze
CORE VI -BIOINFORMATICS		
CO1	Intended to give basics of biological concepts.	K2 Comprehension
CO2	Use of information technology tools to understand biology.	K3 Application = Apply
CO3	Organization and preservation of biological data.	K3 Application = Apply
CO4	Development of resources to analysis and interpret results.	K4 Analysis = Analyze
CO5	Caters the immediate needs in pharmaceutical industries.	K5 Evaluation = Evaluate
CORE PRACTICAL II -DEVELOPMENTAL BIOLOGY, ENVIRONMENTAL BIOLOGY & BIODIVERSITY AND BIOINFORMATICS		
CO1	Basic applications of embryonic development	K3 Application = Apply
CO2	To keep in mind the environmental assessment strategies and management systems.	K3 Application = Apply
CO3	To comprehend embryonic formation and developmental stages with suitable example.	K3 Application = Apply
CO4	Development of rapid sequencing technique.	K4 Analysis = Analyze
CO5	To apply the advancement of computer-based technology in life sciences.	K5 Evaluation = Evaluate
ELECTIVE – II BIOSTATISTICS & COMPUTER APPLICATIONS		
CO1	Understand the basic concept and application of biostatistics.	K2 Comprehension
CO2	Know the application of biostatistics for testing hypothesis.	K2 Comprehension

CO3	Understand the process of statistical analysis accurately and effectively.	K3 Application = Apply
CO4	To get familiar with the computer architecture.	K4 Analysis = Analyze
CO5	Apply the knowledge of computer in the field of biology.	K5 Evaluation = Evaluate
ELECTIVE – II BIOPHARMACEUTICALS		
CO1	To implement the microbial products in pharmaceutical industry	K2 Comprehension
CO2	To discuss the DNA technology in pharmaceutical products	K2 Comprehension
CO3	To understand the drug metabolism	K3 Application = Apply
CO4	To implement the microbial products in pharmaceutical industry	K4 Analysis = Analyze
CO5	To be an entrepreneur in pharmaceutical.	K5 Evaluation = Evaluate
CORE VII-MOLECULAR GENETICS		
CO1	Acquaint with genetic Terminologies, Mendelian inheritance, and gene interaction.	K1 Knowledge = Remember
CO2	Deploy the role of mutation in genetic disorders and diseases.	K5 Evaluation = Evaluate
CO3	Gain better knowledge on methods of Sex determination.	K2 Comprehension
CO4	Comprehensive and detailed analysis of the structure and function of genetic material.	K4 Analysis = Analyze, K5 Evaluation = Evaluate
CO5	Explore the applications of Hardy-Weinberg law.	K3 Application = Apply,K5 Evaluation = Evaluate
CORE VIII - SERICULTURE		
CO1	Students learn the basics of silkworm rearing techniques.	K2 Comprehension
CO2	Understand the economic importance of sericulture.	K2 Comprehension
CO3	Obtain knowledge on the basic facts about grainages.	K3 Application = Apply
CO4	Know about the silk reeling and cocoon marketing.	K4 Analysis = Analyze
CO5	To obtain knowledge on the basic facts about grainages and silk reeling.	K5 Evaluation = Evaluate
CORE IX -BIOTECHNOLOGY		
CO1	Understand the basic Principle and application of Genetic Engineering.	K1 Knowledge = Remember
CO2	Comprehend the principles and methods of Gene cloning, understand the Construction of c-DNA library and also the application of PCR, blotting techniques.	K2 Comprehension,K3 Application = Apply
CO3	Elucidate transgenesis and invitro culture techniques of animals.	K3 Application = Apply,K6
CO4	Gain knowledge about basic principles and applications of Bio techniques in Industry.	K3 Application = Apply,K4
CO5	Apply their Knowledge in the Production and application of Human Health care products and learn the importance & social implications of Gene therapy.	K3 Application = Apply,K6

CO6	Basic principles and application of forensic science and also gain knowledge on application of nano structures in Bio medical science.	K3 Application = Apply,K4 Analysis = Analyze
CORE PRACTICAL III -MOLECULAR GENETICS, SERICULTURE AND BIOTECHNOLOGY		
CO1	To understand the Mendelian Laws through Experiments	K3 Application = Apply
CO2	Able to perform, analyze and report on experiments and observations in Genetics	K4 Analysis = Analyze
CO3	Understand safe laboratory practices and to conduct independent work in a laboratory.	K5 Evaluation = Evaluate
CO4	To understand the procedure for Silkworm rearing	K5 Evaluation = Evaluate
CO5	To analyze the biotechnological areas.	K5 Evaluation = Evaluate
ELECTIVE III- EVOLUTION		
CO1	To understand the concepts of origin of life and their evolution in different Past Eras	K2 Comprehension
CO2	To understand different theories of evolutionary concepts	K3 Application = Apply
CO3	To know well about the Adaptations, Adaptive Radiations with appropriate examples	K5 Evaluation = Evaluate
CO4	To Understanding of genetic basis of evolution, human karyotyping and speciation.	K4 Analysis = Analyze
CO5	To have a knowledge about the origin and evolution of Human and mile stones of cultural evolution	K2 Comprehension
ELECTIVE III - FOOD AND NUTRITION		
CO1	To understand the energy values of various foods.	K2 Comprehension
CO2	To apply the importance of food chart.	K3 Application = Apply
CO3	To analyze the food deficiency diseases.	K5 Evaluation = Evaluate
CO4	To know about the food borne diseases.	K4 Analysis = Analyze
CO5	To avoid malnutrition.	K2 Comprehension
CORE X- ANIMAL PHYSIOLOGY		
CO1	Description of Feeding Mechanism, Internal transport and gas exchange and discerning acid – base balance.	K2 Comprehension
CO2	Regulation of heartbeat and blood pressure, neural and chemical regulation of respiration and transfer of air,	K2 Comprehension
CO3	Perception of Osmoregulation, kidney function and pattern of excretion.	K2 Comprehension
CO4	Concept of Thermoregulation – Heat balance in Animals, Adaptations to temperature extremes, Aestivation and Hibernation and Counter current Heat exchangers,	K4 Analysis = Analyze
CO5	Description of sensing the environment through Receptors.	K2 Comprehension

CORE XI -IMMUNOLOGY		
CO1	An overview of the immune system, principles of innate and adaptive immunity.	K1Knowledge = Remember
CO2	An Understanding of antigen recognition by immune cells.	K2 Comprehension
CO3	Illustration of Antigen processes and presentation to T Lymphocytes by antigen presenting cells and understanding the role of MHC Complex.	K2 Comprehension
CO4	Description of consequence of Immunodeficiency leading to diseases such as inherited acquired immunodeficiency disease, hypersensitivity diseases, autoimmunity, and Transplant rejection.	K5 Evaluation = Evaluate
CO5	An understanding of manipulation of Immune responses for the benefit of mankind – vaccines.	K5 Evaluation = Evaluate
CORE PRACTICAL IV -ANIMAL PHYSIOLOGY & IMMUNOLOGY		
CO1	To apply functional knowledge on various organs and its status.	K5 Evaluation = Evaluate
CO2	To comprehend physiological activity of organ systems.	K4 Analysis = Analyze
CO3	To understand the concepts and methodology to various immunological techniques	K6 / Synthesis = Create
CO4	Knowledge of immune system by isolating of Lymphocytes and Antibodies	K5 Evaluation = Evaluate
INDIVIDUAL PROJECT		
CO1	To prepare the students for further research.	K5 Evaluation = Evaluate
CO2	Inculcate innovative ideas for modern science and technology development.	K4 Analysis = Analyze
CO3	Learn to write research proposals for funding.	K6 / Synthesis = Create
CO4	To become technically knowledge students.	K5 Evaluation = Evaluate