PG AND RESEARCH DEPARTMENT OF ZOOLOGY
Programme: B.Sc. Zoology

PO No.	Programme Outcomes *Upon completion of the B.Sc. Degree Programme, the graduate will be able to*
PO-1	To impart basic knowledge of various branches of Zoology and to understand the unity of life with the rich diversity of organisms and their ecological and evolutionary significance.
PO-2	To appreciate the complexities of biological organization and address scientifically controversial issues in a rational way.
PO-3	To assess the scope of animal biology and select particular areas for further study.
PO-4	To inculcate transformational impact on the quality of education and to inspire the students to adopt scientific temper and live with scientific values.
PO-5	To make the students aware of applications of Zoology and to highlight the potential of various branches to become an entrepreneur.

PSO No.	Programme Specific Outcomes *Upon completion of the courses the student would be able to*
PSO-1	Gain the knowledge of Zoology through theory and practical's. and analyze the relationships among animals with their ecosystems
PSO-2	Learn to classify the major groups of organisms under different phyla, understanding the functioning of organisms.
PSO-3	Able to compare and contrast anatomical and physiological characteristics of animals and understand good laboratory practices as per laboratory standards
PSO-4	Handling the sophisticated instruments/equipment to develop technical skills, research oriented skills about research methodologies.
PSO-5	Develop effective communication and skills of problem solving methods.

Course Title	CORE COURSE I : BIOLOGY OF INVERTEBRATES		
Code	ZUA		
CO No.	Course Outcomes	PSOs Addressed	Cognitive Level
CO-1	Describe the distinguishing characteristics of the major taxa. Explain the basic aspects of classification details of invertebrates. Understand biodiversity, habitat, adaptation organization and taxonomic status of invertebrates	PSO-1,2,3,4,5	Un, Re, An, Ap, Ev
CO-2	Recall certain morphological attributes and physiological processes that are distinct and significant to each Phyla	PSO-1,2,3,4,5	Un, Ac, Ap, Ev, Cr
CO-3	Understand the systemic and functional morphology of various groups of invertebrates Explain the basic aspects of structural and functional details of Invertebrates	PSO- 2,3	Re, An
CO-4	To compare and understand the general and specific characteristics within each Phyla.	PSO-1,4	Re, An
CO-5	Interpret the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Non Chordates.	PSO-1,2,3,4,5	Re, Ap, An, Ev, Cr

Course Title	CORE COURSE II : BIOLOGY OF CHORDATES		
Code	ZUB		
CO No.	Course Outcomes	PSOs Addressed	Cognitive Level
CO-1	Identify the general and specific characteristics of the different classes and the organization of the representative types.	PSO- 1, 2, 3	Ac, Un, An
CO-2	Recognize and describe the major groups of chordates.	PSO-1, 2	Ac, Un
CO-3	Understand the diversity of Chordates and its outline systematic. Discuss their affinities and adaptations to different modes of life	PSO-1, 2 , 3	Ac, Un, An
CO-4	Understand the unique features, taxonomy and functional morphology of different classes of chordates.	PSO-1, 2, 3, 5	Ac, Un, An, Cr
CO-5	To infer the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Chordates	PSO-1, 2, 5	Ac, Un, Cr

Course Title	CORE PRACTICAL- I (BIOLOGY OF INVERTEBRATES AND BIOLOGY OF CHORDATES)		
Code	**ZUCY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Dissect and identify the internal organs of invertebrate organisms	PSO-1, 2, 4	Un, Ac, Ap
CO-2	Understand the mounting techniques of parts of the organisms	PSO- 1, 2, 3	Un, Re, An
CO-3	Understand the diversity of invertebrates and its outline systematic. Discuss their affinities and adaptations to different modes of life	PSO-1, 2, 3	Un, Re, An
CO-4	Dissect and identify the internal organs of chordates animals	PSO-1, 2, 3	Un, Re, An
CO-5	To infer the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Chordates	PSO-1, 2, 3, 5	Un, Re, An, Cr

Course Title	CORE COURSE III CELL BIOLOGY		
Code	**ZUD**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To impart knowledge about the prokaryotic and eukaryotic cell, biosynthesis of cellular membranes and organelles and the unified role it plays for the ultimate sustainability of the organisms.	PSO-1, 2, 3,4	Ac, Un, An, Ap
CO-2	Rigorous foundation in the principles of molecular and cellular biology give insights into the mechanisms involved in the synthesis and function of macromolecules such as DNA, RNA, and proteins.	PSO-1, 2, 3,4	Ac, Un, An, Ap
CO-3	Ability to make connections between the molecular mechanisms, holistic understanding of biological organization and function from the molecules to cells, tissues, organs and entire organism.	PSO-1, 2, 3,	Re, Un, Ap
CO-4	Studying Cells at molecular level trains the students to think logically, critically and quantitatively.	PSO-1, 2,4	Ac,Un, An,
CO-5	Learn to interpret statements made in the scientific literature, as well as in non-science areas, based on evidence, not anecdote.	PSO- 5	Cr

Course Title	NON MAJOR ELECTIVE COURSE I PUBLIC HEALTH AND HYGIENE		
Code	**ZUE1**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand public health practice requires multidisciplinary team of public health workers and professionals	PSO-1, 2, 3	Ac, Un, Ap
CO-2	Improve the quality of life through promotion of healthy behaviors including mental health.	PSO- 1, 2	Ac, Un,
CO-3	Learn healthy habits to protect yourself from disease and prevent germs and infectious diseases from spreading	PSO-1, 2, 3,4	Re, Un, Ap, An,
CO-4	Understand the Socioeconomic impact of non-communicable diseases.	PSO-1, 2,	Re, Un,
CO-5	Aware of public health is the result of society's efforts as a whole, rather than that of single individuals	PSO-1, 2, 3	Ac, Un, Ap

Course Title	CORE COURSE IV DEVELOPMENTAL BIOLOGY		
Code	**ZUE**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Develop critical understanding how a single-celled fertilized egg becomes an embryo and then a fully formed adult.	PSO-1,2	Ac, Un
CO-2	Understand how development affects organization of phenotypes and their variation.	PSO-1,2, 3, 4	Ac, Un, Ap, An,
CO-3	Aware of the reproductive cycle, hormones, Birth control and critically assess relevant scientific literature in reproductive biology and present their argument in oral and written work.	PSO-1,2,3,4,5	Ac, Re, Un, Ap, Cr
CO-4	Explain the concept of Immunology, Mechanism of immunity, Immunity regulating cells.	PSO-1, 2, 4	Ac, Un, An
CO-5	Understand the Basic structure, classes and function of Antibodies, Antigen-Antibody interaction..	PSO- 1, 2, 3	Re, Un, Ap

Course Title	CP-II (CORE COURSE IV & V) -PRACTICAL II		
Code	**ZUFY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand cell type and have thorough knowledge on microscope.	PSO-1,2	Ac, Un,
CO-2	Ability to identify different stages of cell division and get thorough	PSO-1,2	Ac, Re,
CO-3	Understand different cell types in human tissues and trained to operate the instrument microtome, centrifuge	PSO-1,3,4	Ac, Ap,An,
CO-4	Understand and trained different developmental stages of chick and get hands on training in mounting of chick blastoderm.	PSO-1, 3	Ac, Ap
CO-5	Learn lymphoid organs and know the technique of cell imprinting	PSO-1, 4, 5	Ac, An, Cr

Course Title	SKILL BASED ELECTIVE COURSE I APICULTURE		
Code	**ZUS1**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Know the scope of bee keeping and Learn various concepts of apiculture	PSO-1,2,	Ac, Un,
CO-2	Understand what makes the scientific study of animal and the Bee keeping equipments	PSO- 1, 2	Ac, Un,
CO-3	Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field	PSO- 1, 2,3	Re, Un, Ap
CO-4	Be aware of a broad array of career options and activities in human medicine, biomedical research and allied health professions at local or global level.	PSO- 1, 2, 5	Ac, Un, Cr
CO-5	Analyse a biological problem, derive testable hypotheses and then design experiments and put the tests into practice	PSO- 1, 2, 3, 4,	Re, Un, Ap, An,

Course Title	NON MAJOR ELECTIVE COURSE II COMMERCIAL ZOOLOGY		
Code	**ZUE2**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Learn the courses with excitement of biology along with the self employment opportunity in vermiculture	PSO-1,2,3	Ac, Un, Ap
CO-2	Students interested in entrepreneurship and start some small business based on their interest and experience on apiculture	PSO-1,2,3	Ac, Un, Ap
CO-3	Ability to impart complex technical knowledge relating to economic importance of Lac and sericulture	PSO-1, 2, 3, 4	Ac, Un, Ap, An
CO-4	Work precisely in aquaculture field by learning culture practice and construction, management of pond	PSO-1,2,3	Ac, Un, Ap,
CO-5	Familiar with poultry farming to generate employment opportunity	PSO-1,2,3	Ac, Un, Ap,

Course Title	CORE COURSE :V ANIMAL PHYSIOLOGY		
Code	**ZUG**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Know the role of nutrition in human and its source, types and importance. To understand the mechanism of human respiration.	PSO-1, 2	Ac, Un
CO-2	To understand the blood circulation and excretion of human.	PSO-1,2,	Ac, Un
CO-3	Recognize the complimentary relationship of structure and function of nerves and describe the interactions between different organ systems to maintain homeostasis	PSO-3	Ap
CO-4	Able to explain the receptors and biological rhythms in response to internal and external environmental changes.	PSO- 1,4	Re, An
CO-5	Know the role of hormones in reproduction of mammals.	PSO-1,2,4	Ac, Un, An

Course Title	CORE COURSE VI GENETICS AND EVOLUTION		
Code	**ZUH**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Able to explain the role of the mendelian's inheritance and multiple alleles in day to day life activities.	PSO-1.2	Ac, Un,
CO-2	Understand the cause and effect of alterations in chromosome number in sex determination	PSO-1,2,3	Ac, Un, Ap
CO-3	Understanding the applications of genetics for the welfare of health and treatment of disease, and the impact of selective advantage and natural selection on human genetic disorders.	PSO-1,2	Ac, Un
CO-4	Acquired technical skills will help the students for collecting and processing biological specimens for analysis.	PSO-1, 2,3	Re, Un, Ap
CO-5	Students enable their critical and analytical thinking in the detection of diseases and to distinguish normal and abnormal microscopic pathogens.	PSO-1,2,3	Re, Un, Ap,

Course Title	CORE COURSE VII MICROBIOLOGY		
Code	**ZUI**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the economic importance of microbes.	PSO-1.2	Ac, Un,
CO-2	Hands on training in culture of microbes.	PSO-1,2,3	Ac, Un, Ap
CO-3	Know the microorganism in different environment and its effect on human.	PSO-1,2	Ac, Un
CO-4	Know the pathogenic organisms and standards of food.	PSO-1, 2,3	Re, Un, Ap
CO-5	Hands on training in the laboratory diagnosis of disease causing microbes.	PSO-1,2,3	Re, Un, Ap,

Course Title	CP- III (CORE COURSE - VII, VIII, AND IX) PRACTICAL III		
Code	**ZUJY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Able to explain the role of the mendelian inheritance, and effect of alterations in chromosome number in sex determination	PSO-2, 3	Un, Ap
CO-2	Enable their critical and analytical thinking in the detection of diseases and to distinguish normal and abnormal microscopic pathogens	PSO-4	An
CO-3	Know the Ecosystem and the factors	PSO-2	Un
CO-4	Understand types, values and conservation of biodiversity	PSO-2,	Un
CO-5	Understand the principles and practices of biotechnology	PSO-2	Un

Course Title	MAJOR BASED ELECTIVE COURSE I VERMICULTURE		
Code	**ZUE3**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the classification and diversity of earthworm	PSO-2	Un
CO-2	Know the morphology and lifecycle of earthworm	PSO-1, 3	Ac, Ap
CO-3	Aware of the role of earthworm in sustainable agriculture and its feeding habits	PSO-1, 2, 3,5	Ac, Un, Ap, Cr
CO-4	Apply the advanced techniques in organic wastes	PSO-4,5	Ev, Cr
CO-5	Understand different methods of vermincomposting.	PSO-3, 4,5	Ap, Ev, Cr

Course Title	SKILL BASED ELECTIVE COURSE II POULTRY SCIENCE		
Code	**ZUS2**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Know commercial poultry industry in India..	PSO-1, 2	Ac, Un,
CO-2	Understand types of poultry, feed formulation and additives	PSO- 1, 2,3	Ac, Un, Ap
CO-3	Have practical knowledge on poultry breeding processes, waste disposal and sanitation	PSO- 1, 2, 3,4,5	Ac, Un, Ap, Ev, Cr
CO-4	Aware of poultry disease prevention and control measures.	PSO- 1, 2, 3	Ac, Un, Ap
CO-5	Familiar with management of slaughtering, marketing of poultry meat and its economic importance	PSO-1, 2, 3, 4, 5	Ac, Un, Ap, Ev, Cr

Course Title	SKILL BASED ELECTIVE COURSE III ANIMAL BIOTECHNOLOGY		
Code	**ZUS3**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To impart comprehensive understanding of the principles and practices of biotechnology	PSO-1, 2	Ac, Un
CO-2	Application of genetic engineering in prevention and diagnosis of diseases and discuss the different applications of biotechnology.	PSO-2, 3	Un, Ap
CO-3	Understanding the principles and practices of biotechnology give insights into the fermentation technology.	PSO-2, 3	Un, Ap
CO-4	Understanding the application of genetic engineering in agriculture for production of biofertilizer.	PSO-2, 3	Un, Ap
CO-5	Know the application of biotechnology in the field of enzyme technology.	PSO-1,4	Re, An

Course Title	SSD -PART IV SOFT SKILL DEVELOPMENT		
Code	**SSD**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Know Thyself / Understanding Self	PSO-2	Un
CO-2	Understand Interpersonal Skills \ Working with Others	PSO-2	Un
CO-3	Ability to Communication Skills \ Working with Others	PSO-2	Un
CO-4	Develop Corporate Skills \ Working with Others	PSO-2	Un
CO-5	Learn Selling Self\ Job Hunting	PSO-2,4,5	Un, Ev, Cr

Course Title	CORE COURSE VIII ENVIRONMENTAL BIOLOGY		
Code	**ZUK**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the basic concept of Ecosystem and the factors.	PSO-1,2	Ac, Un
CO-2	Know the population and community ecology.	PSO-1,2	Ac, Un,
CO-3	Aware of sources of pollution, ecological effect and control measures.	PSO-1,2,4	Re, Un, An
CO-4	Understand types, values and conservation of biodiversity.	PSO- 1, 2	Ac, Un,
CO-5	Compare and contrast the various theories on formation of new species and identify the factors that play a role in the process of evolution and understand the genetic basis of evolutionary change	PSO-2, 3	Un, Ap

Course Title	CORE COURSE IX IMMUNOLOGY		
Code	**ZUL**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Classify the types of immunity and organs of immune system.	PSO-1,2	Ac, Un
CO-2	Estimate antigen and antibody interaction and its biological consequences	PSO-1,2	Ac, Un,
CO-3	Interpret types of hypersensitivity and its role in immunity.	PSO-1,2,4	Re, Un, An
CO-4	Distinguish diseases and immune responses and their applications	PSO- 1, 2	Ac, Un,
CO-5	Hands on training in immunotechniques.	PSO-2, 3	Un, Ap

Course Title	CP- IV (CC XI & XII) PRACTICAL IV		
Code	**ZUMY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand quantitative test of macromolecules	PSO-2, 3	Un, Ap
CO-2	Know the Hematological study and its purpose	PSO-2, 4	Un, An
CO-3	Understand bio-instrument principles and functions	PSO- 2, 3	Un, Ap
CO-4	Know the technique of biochemical samples	PSO-2, 3	Un, Ap
CO-5	Apply biostatistics in biological samples	PSO-2,3,4	Un, Ap, An

Course Title	MAJOR BASED ELECTIVE COURSE II MEDICAL LAB TECHNOLOGY.		
Code	**ZUE4**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Acquired technical skills will help the students for collecting and processing biological specimens for analysis	PSO-1,2,4	Ac, Un, An
CO-2	Understand fundamental analytical principles and processes used in clinical laboratory testing	PSO-2, 3,4	Un, An, Ap
CO-3	Application of medical laboratory test will enable the students to understand normal and abnormal	PSO-2,3	Un, Ap
CO-4	Students enable their critical and analytical thinking in the detection of diseases.	PSO-4	Ev
CO-5	Application of medical laboratory procedures will enable the students to distinguish normal and abnormal microscopic pathogens.	PSO-4,5	Ev, Cr

Course Title	MAJOR BASED ELECTIVE COURSE III ECONOMIC ZOOLOGY		
Code	**ZUE5**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Explore various techniques used in fishery practices. Understanding the scientific terms, concepts, facts, phenomenon & their interrelationship of fish.	PSO-2, 3	Un, Ap
CO-2	Aware of the crustacean fishery and field management practices	PSO-2,3	Un, Ap
CO-3	To understand Lac culture status in India and its economic importance.	PSO-1,3	Re, Ap
CO-4	To understand the economic importance of Molluscan fisheries and knowledge on mass culture and enrichment of live food organisms.	PSO-2, 4,5	Un, Ev, Cr
CO-5	To gain in depth knowledge and field exposure on sustainable piggery practices	PSO-2, 3,	Un, Ap

PG AND RESEARCH DEPARTMENT OF ZOOLOGY
Programme: M.Sc. Zoology

PO No.	Programme Outcomes *Upon completion of the M.Sc.,. Degree Programme, the graduate will be able to*
PO-1	Students who graduate with Master of Science in Zoology will.
PO-2	Obtain a significant knowledge on fundamental and advanced aspects of zoology.
PO-3	Gain in-depth knowledge on different branch of zoology
PO-4	Gain proficiency in Laboratory techniques of basic zoology and Assimilate technical skill.
PO-5	Grasp the fundamental concept Animal world Job offer: IFS/ZSI/VCRC/ MPEDA/ICMRE/ ICFRE as Research Scientist/ Technical officers.

PSO No.	Programme Specific Outcomes *Upon completion of the courses the student would be able to*
PSO-1	Understand the nature and basic concepts of cell biology, Biochemistry, Taxonomy and ecology and analyze the relationships among animals, plants and microbes. (scientific knowledge).
PSO-2	Perform procedures as per laboratory standards in the area of Biochemistry, Biostatistics, Taxonomy, Economic zoology and Ecology and understand the applications of biological sciences in Aquaculture, Pisciculture, Agriculture and Medicine. (Professional skill).
PSO-3	The ability to learn about the scientific methods and how it facilitates the discovery of new knowledge in biology. This includes how to critically evaluate hypotheses and conclusions in science using verifiable data and how to clearly and effectively communicate the major concepts and hypotheses in biology in an appropriate style of presentation. (Design/development of Solutions).
PSO-4	To acquire basic knowledge and skills in the observation and study of nature , biological techniques, experimental skills and scientific investigation and certain applied branches to enable them for self employment.(Problem-Solving Skills).
PSO-5	To train academically sound future researchers and intellectual s in the area of general biology with emphasis in areas on the cutting edge of modern biology , e.g., Molecular biology, Biochemistry, Physiology, Genetics, Cytology and Environmental conservation.. (Successful Career and Entrepreneurship).

Course Title	CORE COURSE : I ANIMAL PHYLOGENY& BIODIVERSITY		
Code	**PGZA**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand and study of the Origin and phylogeny of Invertebrates and Chordates	PSO-2	Un
CO-2	Understand the organization, Homology and Analogy, Diversity of Invertebrate and chordates.	PSO-2	Un
CO-3	Job offering: Nature conservation officer in Forest Department.	PSO-2,5	Un, Cr
CO-4	Zoo keeper in Museum, Sanctuaries.	PSO-2,5	Un, Cr
CO-5	Research Scientist in ICFRE Institutes, Van Vigyan Kendra, SACON.	PSO-2, 5	Un, Cr

Course Title	CORE COURSE : II CELL AND MOLECULAR BIOLOGY		
Code	**PGZB**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the cell structure in molecular level.	PSO-1,2	Re, Un
CO-2	Understand basic idea of cell cycle and regulation to apply in research.	PSO-1,2,3	Ac,Un,Ap
CO-3	Job offers: Research Scientist in Cancer Research center, Adayar.	PSO-2,5	Un, Cr
CO-4	Research Scientist in Tata Memorial Centre for Advanced Treatment in Cancer, Parel Mumbai.	PSO-2,5	Un, Cr
CO-5	Technical officer in Centre for cellular and Molecular Biology (CCMB), TIFR at Hyderabad.	PSO-2,5	Un, Cr

Course Title	Core Course : III GENETICS		
Code	**PGZC**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Student will test and deepen their mastery of genetics by applying this knowledge in a variety of problem solving situations.	PSO-1, 4	Ac, An
CO-2	Student learn the basic principles if inheritance at molecular level.	PSO-1,2	Ac, Un
CO-3	Job offer: Technician in Karyotyping in Medical Research Centre.	PSO-2,5	Un, Cr
CO-4	Research scientist in ICMR institutes	PSO-2, 3,5	Un, An, Cr
CO-5	Research Assistant in Institute of Forest Genetics and Tree Breeding, Coimbatore.	PSO-2,3,4	U, Ap, Ev

Course Title	CORE COURSE : IV MICROBIOLOGY& IMMUNOLOGY		
Code	**PGZD**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand an overview of the microbial world, its structure and function.	PSO-1	Re
CO-2	Students have intensive and in-depth learning in culture techniques and familiarize the learner with the applied aspects of microbiology.	PSO-1,2	Ac, Un
CO-3	Student will be able to identify the cellular and molecular basis of immune responsiveness.	PSO-4	Ev
CO-4	Learners understand immunology is the branch of biomedical.	PSO-2	Un
CO-5	Job offer: Epidemiologist, Pathology Assistant, Teacher, Veterinarian Associate, Medical and clinical Laboratory Technologists.	PSO-3,5	Ap, Cr

Course Title	CORE PRACTICAL-I ANIMAL PHYLOGENY& BIODIVERSITY, GENETICS ,CELL AND MOLECULAR BIOLOGY AND MICROBIOLOGY AND IMMUNOLOGY (CC I, II, III and IV)		
Code	**PGZEY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Obtain thorough knowledge in the identification of vertebrate and chordate animals.	PSO-1,2	Ac, Un
CO-2	Familiar with mounting techniques	PSO-3	Ap
CO-3	Know to culture economically important animals	PSO-2,3	Un, Ap
CO-4	Able to do microbial culture technique	PSO-3	Ap
CO-5	Understand the mendelian traits	PSO-2	Un

Course Title	CORE COURSE : V DEVELOPMENTAL BIOLOGY		
Code	**PGZF**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the concepts and process in developmental biology.	PSO-2	Un
CO-2	Understand the genetic mechanisms and the unfolding of the same during development.	PSO-2	Un
CO-3	Expose the learner to the new developments in embryology and its relevance to Man.	PSO-2, 4	Un, Ev
CO-4	Understand egg cleavage and the mechanism of embryogenesis, organ development	PSO-1,2	Ac, Un
CO-5	Job offer: IVF laboratory, Embryologists in O&G department in Medical College and Research Centre, Research Assistant in Veterinari College and Research centre. Animal care taker.	PSO-2,5	Un, Cr

Course Title	Core Course : VI BIOCHEMISTRY, BIOPHYSICS AND BIOTECHNIQUES		
Code	**PGZG**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the chemical nature of life and life process	PSO-1	Ac
CO-2	Understand the structure of bio-molecules and its function in life	PSO-1, 2	Ac, Un
CO-3	Learn the biophysical properties and functioning of life processes	PSO-1, 2	Ac, Un
CO-4	Learn the advanced tools and techniques available for studying biochemical and biophysical nature of life	PSO-2, 3, 4	Un, Ap, Ev
CO-5	Job offer: Instrumentation and Lab technician, Research Assistant in Clinical Laboratory, Technician/Research Assistant in TIFR, CCMB, ICFRE, ICMRE, ICAR, AIMS Research Institute. Institute	PSO-5	Cr

Course Title	CORE COURSE : VII APPLIED BIOTECHNOLOGY		
Code	**PGZH**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand advance technique and its application in the field of biotechnology	PSO-2	Un
CO-2	Understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas	PSO-2, 3	Un, Ap
CO-3	Familiarize the students with public policy, biosafety, and intellectual property rights issues	PSO-1,4	Re, Ev
CO-4	Skill in the advanced technology	PSO-4	An
CO-5	Job offer: BCG vaccine Laboratory Chennai. Pasteur Institute Ooty, Clinical laboratory, Medical Research Centre, IVF laboratory, Research Assistant/ JRF/SRF/ in the Research Institute of ICAR, ICMRE, VCRC, TIFR, CCMB, Fisheries University and Research centre	PSO-5	Cr

Course Title	CORE PRACTICAL -II DEVELOPMENTAL BIOLOGY, BIOCHEMISTRY,BIOPHYSICS, BIOTECHNIQUES AND BIOTECHNOLOGY (CC V, VI and VII)		
Code	**PGZIY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Hands on training in observation of live cells	PSO-3,4	Ap, An
CO-2	Ability to quantify the biological samples	PSO-2,4	Un, An
CO-3	Able to understand the basic mechanisms and operating of bioinstruments	PSO-2, 3	Un, Ap
CO-4	Understand the microtechnique for slide preparation	PSO-2, 3	Un, Ap
CO-5	Know the application of advanced biotechniques.	PSO-3	Ap

Course Title	ELECTIVE COURSE I FISHERY BIOLOGY & FISH PROCESSING TECHNOLOGY		
Code	**PGZE1**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the fish techniques of different fishes	PSO- 1,2	Ac, Un
CO-2	Understand and familiarized with construction of pond and its management strategy	PSO-2, 3	Un, AP
CO-3	Hands on training in fish processing technique	PSO-5	Cr
CO-4	Familiarize with Induced breeding	PSO-3	Ap
CO-5	Job offer: Self employment, Entrepreneur, Executive in fish products, Aquarist, Research Assistant in Fisheries university and Research centre, MPEDA, RGCA, CIBA, CMFRI	PSO-5	Cr

Course Title	Core Course : VIII ANIMAL PHYSIOLOGY		
Code	**PGZJ**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Have enhanced knowledge of mammalian physiology	PSO-1,2	Ac, Un
CO-2	Understand the function of physiological systems such as respiratory, circulatory and metabolic system.	PSO- 1,2	Ac, Un
CO-3	Understand the physiological response to that environment	PSO-2	Un
CO-4	Able to analyze and report on experiments in physiology.	PSO- 4	An
CO-5	Understand the endocrine organs structure and functions	PSO-2	Un

Course Title	CORE COURSE : IX RESEARCH METHODOLOGY AND BIOSTATISTICS		
Code	**PGZK**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the basic concept of research	PSO-1,2	Ac, Un
CO-2	Learn the importance and sources of literature and hypothesis testing concept.	PSO-2, 4	Un, Ev
CO-3	Efficient in document preparation, research article writing and project proposal writing.	PSO-5	Cr
CO-4	Learn data collection and descriptive statistics	PSO-2, 3	Un, An
CO-5	Ability to use the applications of biostatistics to conduct research in the area of biology.	PSO-5	Cr

Course Title	CORE PRACTICAL – III (CORE COURSE VIII & IX) ANIMAL PHYSIOLOGY AND RESEARCH METHODOLOGY		
Code	**PGZLY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the concept and principle of quantitative analysis of physiological enzymes	PSO-1,2	Ac, Un
CO-2	Learn the estimation method of protein and metabolic activity of fish	PSO-2, 3	Un, Ap
CO-3	Hands on training in preparation of histological slide	PSO-2,4	Un, An
CO-4	Develop skill in problem solving related to biological sample data	PSO-2, 4	Un, Ev
CO-5	Efficient with big data analysis software package-SPSS	PSO- 3,4	Ap, An

Course Title	ELECTIVE COURSE II BIOINFORMATICS AND COMPUTER APPLICATIONS IN BIOLOGY		
Code	**PGZE2**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the Biological databases and its scope.	PSO-2	Un
CO-2	Learn sequence alignment to construct phylogenetic tree using of bioinformatic tools	PSO-2,3	Un, Ap
CO-3	Skill to predict protein structure using RASMol package	PSO-3,4	Ap, An
CO-4	Understand the concept of computer programming which make it necessary to integrate informatics when solving biological problems	PSO-2,4	Un, An
CO-5	Understand it has become an important focus for industry, particularly in the post-genomic era.	PSO-2, 3	Un, Ap

Course Title	ELECTIVE COURSE III ENVIRONMENTAL TOXICOLOGY		
Code	**PGZE3**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the concept of population and community ecology.	PSO-1,2	Ac, Un
CO-2	Learn pollution sources, effect, control methods	PSO-2, 3	Un, Ap
CO-3	Learn Solid waste management and its status in India	PSO-2,3,4	Un, Ap, An
CO-4	Understand toxic substances, effect, evaluation, toxicity determination and route of entry	PSO-2,3,4	Un, Ap, Ev
CO-5	Understand excretion of toxicants and biotransformation.	PSO-2, 4	Un, Ev

Course Title	Core Course- X ENVIRONMENTAL BIOLOGY AND EVOLUTION		
Code	**PGZM**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand Scope of Ecology with sub divisions	PSO-1,2	Ac, Un
CO-2	Know the components of ecosystem and animal relationship.	PSO-2	Un
CO-3	Understand Biogeochemical cycles	PSO-2,4	Un, Ev
CO-4	Understand the importance and conservation of Biodiversity	PSO-2	Un
CO-5	Learn origin of life and theories of evolution	PSO-2	Un

Course Title	CORE PRACTICAL IV ENVIRONMENTAL BIOLOGY & EVOLUTON(CC X)		
Code	**PGZNY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Able to demonstrate broad based knowledge of the fundamentals of environmental biology and evolution	**PSO-2**	**Un**
CO-2	Ability to demonstrate skills in the observation and experimental study of organisms using both field based and laboratory based approach.	**PSO-2,3**	**Un, Ap**
CO-3	Understand in identifying analyzing, hypotheses, interpreting results and conclusions, and evaluating quality through critique	**PSO-2,3,4**	**Un, Ap, An**
CO-4	Hands on training in identification of plankton	**PSO-3,4**	**Ap,An**
CO-5	Have preparation of case study report and the scientific document preparation.	**PSO- 3,4,5**	**Ap, Ev, Cr**

Course Title	ELECTIVE COURSE IV ECONOMIC ENTOMOLOGY		
Code	**PGZE4**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Study the classification of insects	PSO-1	Ac
CO-2	Understand the beneficial insect in detail	PSO-2	Un
CO-3	Learn how pest become harmful insect	PSO-2,4	Un, Ev
CO-4	Learn integrated pest management methods	PSO-2,4	Un, An
CO-5	Understand the pest control measures and methods	PSO-2,4	Un, An

Course Title	ELECTIVE- V COASTAL AQUACULTURE		
Code	**PGZE5**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the criteria for selecting species, survey and design layout for aqua pond construction	**PSO- 2,5**	**Un, Cr**
CO-2	Study the biology of cultivable species and culture techniques	**PSO-2, 3,4**	**Un, An, Ap**
CO-3	Learn shell fishes and culture methods.	**PSO-2, 3**	**Un, Ap**
CO-4	Skill develop for hatchery techniques and farm management	**PSO- 2,3,5**	**Un, Ap, Cr**
CO-5	Know the farm disease management, treatment and coastal zone management	**PSO-2**	**Un**