Zoology Department

Programme outcomes (PO`s)

F Y. B. Sc. Zoology (Semester-I) Programme Outcomes: B. Sc Zoology

Department of Zoology	After successful completion student should be able to; of three year degree program in Zoology a
Programme Outcomes	PO`s 1: To acquaint the students with the different organs
	in animals and its functions like echolocation, bioluminescence.
	PO`s 2: Students understands the property of regenerations, mimicry and camouflage.
	PO`s 3: Teacher makes the taught understand about biodiversity .
	PO`s 4 : Pupils understands about innovative and novel work of scientists/philosopher/entrepreneurs in the field of biological sciences.
	PO`s 5 : Students learnt about handling of different instruments and working for a particular experiments,
	PO`s 6 : The pupils understands about applications of biotechnology.
	PO`s 7: Students understands meaning of symbols.
	PO`s 8: To acquaint the students by biogenesis and units of measurement,
	PO`s 9: Create an awareness of the impact of Zoology on the environment, society, and development outside the scientific community.
	PO`s 10: Demonstrate use of instruments .
	PO`s 11: To study and understand the different types of Instruments with the help of teaching aids like PPT`s, Videos, charts, models etc.
	PO`s 12: To inculcate the scientific temperament in the students and outside the scientific community.

Programme Specific Outcomes	PSO-1 . Gain the knowledge of Zoology through theory and practical		
	PSO-2. Study and understand the Structures and function Classification, anatomy, poisons, of animals.		
	PSO-3. Understand the testing of hypothesis.		
	PSO-4 . Know structure-activity relationship		
	PSO-5 Understand good laboratory practices and safety.		
	PSO-6 . Develop research oriented skills.		
	PSO-7 .Make aware and handle the sophisticated instruments/equipment's		
	PSO-8 .: Use modern Zoological tools, Charts, Models, and Equipments.		
Course Outcomes B. Sc Zoology			
Semester-1 Paper II INSTRUMENTATION and ANIMAL BIOTECHNOLOGY			
Course	Outcomes		
After completio	n of these courses students should be able to;		
Unit 1:	Learners would work safely in the laboratory and		
Laboratory safety, Units and	avoid occurrence of accidents (mishaps) which will		
Measurement	boost their scholastic performance and economy in		
	use of materials/chemicals during practical sessions		
Unit 2:	Learners would understand recent advances in the		
Animal Biotechnology	subject and their applications for the betterment of		
	mankind; and that the young minds would be tuned to think out of the box		
Unit 3.	 Students will be skilled to select and operate 		
Instrumentation	suitable instruments for the studies of different		
	components of Zoology of this course and also of		
	higher classes including research		

Zoology Department

Programme outcomes (PO`s)

F Y. B. Sc. Zoology (Semester-II) Programme Outcomes: B. Sc Zoology

Department of Zoology	After successful completion student should be able to;
	of three year degree program in Zoology a
Programme Outcomes	PO`s 1: To acquaint the students with the ecologies,
	population density.
	PO`s 2: Students understands the property of concepts of
	ecosystems.
	PO's 3: Teacher makes the taught understand about
	Parks and sanctuaries,
	PO`s 4 : Pupils understands about Ecotourism.
	PO's 5: Students learnt about handling of Nutrition and
	health and hygiene.
	PO's 6 . The pupils understands about common diseases and
	its treatment.
	PO`s 7: Students understands meaning of symbols.
	PO's 8: To acquaint the students by biogenesis and units of
	measurement,
	PO`s 9: Create an awareness of the impact of Zoology on the
	environment, society, and development outside the scientific
	community.
	PO's 10: Demonstrate use of instruments .
	DON: 11. The standard devices of the different times of
	PO S 11: To study and understand the different types of Instruments, with the help of teaching aids like DDT's
	Videos charts models etc
	videos, charts, models etc.
	PO`s 12: To inculcate the scientific temperament in the
	students and outside the scientific community.
Programme Specific	PSO-1 . Gain the knowledge of Zoology through theory and
Outcomes	practical
	DEC 2 Study and understand the Structure and for still
	Classification anatomy poisons of animals
	Classification, anatomy, poisons, or animals.

	PSO-3. Understand the testing of hypothesis.	
	PSO-4 . Know structure-activity relationship	
	PSO-5 Understand good laboratory practices and safety.	
	PSO-6 . Develop research oriented skills.	
	PSO-7 .Make aware and handle the sophisticated instruments/equipment's	
	PSO-8 .: Use modern Zoological tools, Charts, Models, and Equipments.	
	Course Outcomes B. Sc Zoology	
	Semester-II Paper I	
I	Ecology and Wildlife Management	
Course	Outcomes	
Unit 1:	This unit would allow learners to study about nature of	
Population ecology	animal population, specific factors affecting its growth and its	
Unit 2.	Impact on the population of other file form	
Unit 2: Ecogystem	Learners will grasp the concept of interdependence and interaction of physical chamical and biological factors in the	
Leosystem	anyironment and will lead to better understanding about	
	implications of loss of fauna specifically on human being	
	erupting spur of desire for conservation of all flora and fauna	
Unit 3.	Learners would be inspired to choose career options in the	
National parks and	field of wild life conservation, research, photography and	
Sanctuaries of India	ecotourism.	
	Course Outcomes B. Sc Zoology	
	Semester-II Paper II	
NUTRITION, PUBLIC HEALTH AND HYGIENE		
Course	Outcomes	
After comple	etion of these courses students should be able to;	
Unit 1:	Healthy dietary habits would be inculcated in the life style of	
	learners in order to prevent risk of developing health hazards	
Nutrition and Health	in younger generation due to faulty eating habits	
Unit 2	Promoting optimum conservation of water, encouragement	
	for maintaining adequate personal hygiene, optimum use of	
Public Health and Hygiene	electronic gadgets, avoiding addiction, thus facilitating	
	achievement of the goal of heating young india in true sense.	
LINIT 3.	Learners will be able to promptly recognize stress related	
Common Human	problems at initial stages and would be able to adopt relevant	
Diseases and Disorders	solutions which would lead to psychologically strong mind	
	set promoting positive attitude important for academics and	
	would be able to acquire knowledge of cause, symptoms and	
	precautions of infectious diseases	

Zoology Department

Programme outcomes (PO`s)

S. Y. B. Sc. Zoology (Semester-III) Programme Outcomes: B. Sc Zoology

Department of Zoology	Department of Zoology		
Programme Specific Outcomes	PSO-1. Gain the knowledge of Zoology through theory and practical.		
	PSO-2. Study and understand the Structures and function of excretory		
	PSO-3. Understand the testing of hypothesis.		
	PSO-4. Know structure-activity relationship		
	PSO-5 Understand good laboratory practices and safety. PSO-6. Develop research oriented skills.		
	PSO-7.Make aware and handle the sophisticated instruments/equipments		
	PSO-7.: Use modern Zoological tools, Charts, Models, and Equipments		
	PO's -8: Various illness, their causes are understood by students due to observing blood report.		
	Course Outcomes B. Sc Zoology Semester-III Paper I		
Fundamen	tals of Genetics, Chromosomes and Heredity, Nucleic acids		
Course	Outcomes		
	After completion of these courses students should be able to;		
Unit 1:	Learner would comprehend and apply the principles of inhoritones to study heredity.		
Genetics	 Learner will understand the concept of multiple alleles linkage 		
Generals	and crossing over.		
Unit: 2:	Learner will comprehend the structure of chromosomes and its		
Chromosomes and	types.		
Heredity	Learner will understand the mechanisms of sex determination.		
	particular		
Unit: 3			
Nucleic acids	Learner will understand the importance of nucleic acids as		
	genetic material.		
	expressions		

Course Outcomes B. Sc Zoology		
Nutrition and Excretion, Respiration and Circulation, Control and Coordination of Life		
	Processes, Locomotion and Reproduction	
Course	Outcomes	
	After completion of these courses students should be able to;	
Unit: 1: Nutrition and Excretion	 Learner would understand the increasing complexity of respiratory and circulatory physiology in evolutionary hierarchy. Learner will be able to correlate the habit and habitat of animals with respiratory and circulatory organs 	
Unit: 2 : Respiration and Circulation	 Learner would understand the increasing complexity of respiratory and circulatory physiology in evolutionary hierarchy. Learner will be able to correlate the habit and habitat of animals with respiratory and circulatory organs 	
Unit: 3 Control and Coordination, Locomotion and Reproduction	 Learner would understand the process of control and coordination by nervous and endocrine regulation. Learner would be amazed by various locomotory structures found in the animal kingdom Learner would be acquainted with various reproductive strategies present in animals 	
	Course Outcomes B. Sc Zoology Semester-III Paper III Ethology, Parasitology, Economic Zoology	
Course	Outcomes	
	After completion of these courses students should be able to;	
Unit: 1 Ethology	 Learner would gain insight into different types of animal behaviour and their role in biological adaptations. Learner would be sensitized to the feelings which are instrumental in social behaviour. 	
Unit: 2 Parasitology	 Learner would understand the general epidemiological aspects of parasites that affect humans and take simple preventive measures for the same. Learner would comprehend the life cycle of specific parasites, the symptoms of the disease and its treatment 	
Unit 3 Economic Zoology	 Learner would gain knowledge on animals useful to mankind and the means to make the most of it. Learner would learn the modern techniques in animal husbandry. Learner would pursue entrepreneurship as a career 	

Zoology Department

Programme outcomes (PO`s)

S. Y. B. Sc. Zoology (Semester-IV) Programme Outcomes: B. Sc Zoology

Department of Zoology	Department of Zoology		
Programme outcomes	PO`s 1: To acquaint the students with origin of earth, universe and life.		
(PO's)	PO`s 2: .Studends understands Evidences of evolution.		
	Pos`s 3:. The pupils are getting awareness of scientific writins, various research methodology and ethics and research structure.		
	PO`s 4: The students get acquaint with cell biology, and various organells.		
	PO`s 5: The pupils geta an understanding of origin of life .universe		
	PO`s 6: Students understands what are cells, endomembrane, nucleous.		
	PO`s-7 . Use modern techniques, decent equipment's and Zoology PPT`s and videos.		
	PO`s 8: To acquaint the taught with pollution and its types.		
	PO`s 9: The students understands about about the sericulture, aquaculture & dairy industry which generates money.		
	PO`s 13: Students get acquainted with the economy of Zoology as it creates source of income from various animals.		
	PO`s 14: The pupils are highlighted with the knowledge of reproduction, pollution and embryology.		
Programme Specific	PSO-1. Gain the knowledge of Zoology through theory and practical.		
Outcomes	PSO-2. Study and understand the Structures and function of excretory		
	PSO-3. Understand the testing of hypothesis.		
	PSO-4. Know structure-activity relationship		
	PSO-5 Understand good laboratory practices and safety. PSO-6. Develop research oriented skills.		
	PSO-7.Make aware and handle the sophisticated instruments/equipments		

F			
	PSO-7.: Use modern Zoological tools, Charts, Models, and Equipments		
	PO's -8: Various illness, their causes are understood by students due to observing blood report.		
	Course Outcomes B. Sc Zoology Semester-IV Paner I		
Fundamen	tals of Genetics, Chromosomes and Heredity, Nucleic acids		
Course	Outcomes		
	After completion of these courses students should be able to;		
Unit 1:	Learner would comprehend and apply the principles of		
Fundamentals of	inheritance to study heredity. \Box Learner will understand the		
Genetics	concept of multiple alleles, linkage and crossing over.		
	\blacktriangleright		
Unit: 2:	Learner will comprehend the structure of chromosomes and its		
Chromosomes and	types.		
Heredity	Learner will understand the mechanisms of sex determination.		
	Learner would be able to correlate the disorders linked to a		
	particular sex chromosome		
Unit: 3	Learner will understand the importance of nucleic acids as		
Nucleic acids	genetic material.		
	Learner would comprehend and appreciate the regulation of		
	gene expressions		
Country Outcomes P. So Zoology			
Somester-IV Paper I			
Origin and Evolution of Life Population Genetics and Evolution Scientific Attitude			
Methodology, Scientific Writing and Ethics in Scientific Research			
Course	Outcomes		
	After completion of these courses students should be able to;		
Unit 1:	➢ Learner will gain insights into the origin of life.		
Origin and Evolution	> Learner will analyse and critically view the different theories of		

Course	Outcomes	
	After completion of these courses students should be able to;	
Unit 1:	Learner will	gain insights into the origin of life.
Origin and Evolution	Learner will	analyse and critically view the different theories of
of Life	evolution.	
Unit: 2:	Learner would	d understand the forces that cause evolutionary
Population Genetics	changes in na	tural populations
and Evolution	Learner would	d comprehend the mechanisms of speciation
	Learner will	be able to distinguish between microevolution,
	macroevoluti	on and megaevolution
Unit: 3	The learner v	yould develop qualities such as critical thinking and
Scientific Attitude	analysis	
Methodology,	The learner v	vill imbibe the skills of scientific communication
Scientific Writing and	and he/she w	ll understand the ethical aspects of research
Ethics in Scientific		
Research		

Course Outcomes B. Sc Zoology Semester-IV Paper II Cell Biology, Endomembrane System and Biomolecule		
Course	Outcomes	
After co	mpletion of these courses students should be able to;	
Unit 1:	Learner would acquire insight into the composition of the	
Cell Biology	transport mechanisms adopted by the cell and its organelles for	
	its maintenance and composition of cell	
Unit: 2:	Learner would appreciate the intricacy of endomembrane system.	
Endomembrane	Learner would understand the interlinking of endomembrane	
System	system for functioning of cell	
Unit: 3	The learner will realize the importance of biomolecules and their	
Biomolecules	clinical significance	
Course Outcomes B. Sc Zoology		
	Semester-IV Paper III	
Comparative	e Embryology, Aspects of Human Reproduction, Pollution and its	
effect on organisms		
UNIT 1:	Learner will be able to understand and compare the different	
Comparative	types of eggs and sperms	
Embryology	Learner will be able to understand and compare the different	
	pre- embryonic stages	
UNIT3:	The learners will be sensitized about the adverse effects of	
Pollution and its	pollution and measures to control it.	
effect on organisms		
UNIT3:	\succ \Box The learners will be sensitized about the adverse effects of	
Pollution and its	pollution and measures to control it.	
effect on organisms		

Zoology Department

Programme outcomes (PO`s)

T. Y. B. Sc. Zoology (Semester-V) Programme Outcomes: B. Sc Zoology

Programme outcomes (PO`s)	 PO's 1:Demonstrate classification of invertebrates and vertebrates. Pos's 2:. Create an awareness of the impact of Zoology on the environment, society, and development outside the scientific community PO's 3: To study and understand the different types of phyla with the help of teaching aids like PPT's, Videos, charts, models etc. PO's 4: To inculcate the scientific temperament in the students and outside the scientific community. PO's 5: The pupils develops an understanding about principals of taxonomy. PO's 6. Use modern techniques, decent equipment's and Zoology PPT's and videos. PO's 7: To acquaint the taught with the concept of hematology and immunity and its application. PO's 8: The students understands application of clinical practices. PO's 10: To students develop an insight about tissues and its culture. PO's 11: The pupil understands about toxicology due to various factors and about hemotoxins, neurotoxins and their source. PO's 12: To calculate relations between co-relation, variations , various parameters , students understands about skin and its derivatives, skeleton, 	
Programme Specific Outcomes	 PSO-1. Gain the knowledge of Zoology through theory and practical. PSO-2. Study and understand the Structures and function Classification, anatomy, poisons, of animals. PSO-3. Understand the testing of hypothesis. PSO-4. Know structure-activity relationship PSO-5 Understand good laboratory practices and safety. PSO-6. Develop research oriented skills. PSO-7.Make aware and handle the sophisticated instruments/equipment's PSO-8.: Use modern Zoological tools, Charts, Models, and Equipments. 	
Course Outcomes B. Sc Zoology Semester-V Paper I Taxonomy - Invertebrates and Type Study		
Course	Outcomes	
After	r completion of these courses students should be able to:	
Unit I:	 Learners will apprehend the basis of classification and modern classification up to class of the lower invertebrate animals. 	

Principles of		
Taxonomy		
Unit II:	\checkmark	The learners will be familiarized with classification up to phylum
Kingdom Animalia I		Nematoda along with their examples.
Unit III:	\succ	Learners will get an idea of higher groups of invertebrate animal
Kingdom Animalia II		life, their classification and their peculiar aspects.
Unit IV.	\triangleright	Learners will get an idea of general characteristics and details of
Type study: Sepia	,	invertebrate animal systems
		Course Outcomes B. Sc Zoology
		Semester-V Paper II
		Haematology and Immunology
Course		Outcomes
After	comple	etion of these courses students should be able to;
Unit I:	\succ	The learner shall comprehend basic haematology. The learner
Basic Haematology		will be able to identify various components of haemostatic
		systems
Unit II:	\checkmark	The learner will be familiar with the terminology used and
Applied Haematology		diagnostic tests performed in a pathological laboratory.
	\succ	The learner shall be acquainted with diagnostic approaches in
		haematological disorders.
	\succ	The learner will be better equipped for further pathological
		course or working in a diagnostic laboratory
Unit III:		The learner shall comprehend the types of immunity and the
Basic Immunology		components of immune system.
		The learner will realize the significant role of immune system in
T T 1 1 T T		giving resistance against diseases.
Unit IV:		The learner shall understand immunopathology and the
Applied Immunology	~	principles and applications of vaccines.
		The learner will develop basic understanding of immunology of
		Course Outcomes B. Se Zoology
		Somester-V Paper III
Demester-V Paper III Histology Toyicology Dathology and Diagtotistics		
Course	IIISU	Outcomes
After	comple	etion of these courses students should be able to:
Unit I:		Learner would appreciate the well planned organization of
Mammalian Histology	-	tissues and cells in the organ systems
Unit II:	\checkmark	The course will prepare learner to develop broad understanding
Toxicology		of the different areas of toxicology.
	\succ	It will also develop critical thinking and assist students in
		preparation for employment in pharmaceutical industry and
		related areas
Unit III:	\succ	Learner will be familiar with various medical terminology
General Pathology		pertaining to pathological condition of the body caused due to
		diseases
Unit IV:		The learner will be able to collect, organize and analyse data
Biostatistics		using parametric and non- parametric tests.
		They will also be able to set up a hypothesis and verify the same
		using limits of significance.

Course Outcomes B. Sc Zoology			
Semester-V Paper IV			
Anatomy and Developmental Biology			
Course		Outcomes	
After completion of these courses students should be able to;			
	\triangleright	Learner will be able to understand the importance of various	
Unit I:		types of epidermal and dermal derivatives along with their	
Integumentary system		functions	
and derivatives			
Unit II:	\triangleright	Learner will be able to understand the structure, types and	
Human Osteology		functions of human skeleton.	
Unit III:	À	Learner will be able to understand the types of long limb	
Muscles of long bones		muscles, its arrangement and their role in body movements	
of Human limbs			
Unit IV:	\checkmark	Learner will be able to understand the processes involved in	
Developmental		embryonic development and practical applications of studying	
biology of Chick		the chick embryology.	

Zoology Department

Programme outcomes (PO`s)

T. Y. B. Sc. Zoology (Semester-VI) Programme Outcomes: B. Sc Zoology

Department of Zoology	Department of Zoology	
Drogramme outcomes	PO's 1. Demonstrate classification of vertebrates and shark's all	
(PO's)	systems	
$(1 \cup 3)$	Po's 2: Create an awareness of the impact of Zoology on the	
	anyironment society and development outside the scientific community	
	PO's 3: To study and understand the different types of phyla with the	
	help of teaching aids like DD T's Videos charts models atc	
	PO's4: To inculcate the scientific temperament in the students and	
	outside the scientific community	
	PO's 5: The pupils develops an understanding about principals of	
	taxonomy	
	\mathbf{PO} is 6. To acquaint the taught with the concent of any molecular	
	homostasis, and arringlogy and tissue culture	
	\mathbf{PO} is 7 : The students understands molecular biology mutations	
	PO's 8 Scientific Attitude, methodology inculastos scientific	
	tomperament in the learners	
	PO's 0: To students develop on insight renairs machanisms of DNA	
	PO's 10: The pupil understands about genetic engineering	
	PO 's 11 : Students understands the meaning of environment and its	
	FO S 11: Students understands the meaning of environment and its management, wildlife management bioprospecting and Zoogoography.	
Programme Specific	PSO-1 . Gain the knowledge of Zoology through theory and practical.	
Outcomes	PSO-2. Study and understand the Structures and function Classification,	
	anatomy, poisons, of animals.	
	PSO-3. Understand the testing of hypothesis.	
	PSO-4 . Know structure-activity relationship	
	PSO-5 Understand good laboratory practices and safety.	
	PSO-6 . Develop research oriented skills.	
	PSO-7 .Make aware and handle the sophisticated	
	instruments/equipment's	
	PSO-8 .: Use modern Zoological tools, Charts, Models, and Equipments.	
	Course Outcomes B. Sc Zoology	
	Semester-VI Paper I	
Taxonomy - Chordates and Type Study		
Course	Outcomes	
After	completion of these courses students should be able to;	
Unit I:	Learners will get an idea of origin of Chordates, its taxonomy up	
Phylum Chordata:	to class with reference to phylogeny and their special features.	
Group Protochordata		
and Group Euchordata		
Ι		

Unit II.	\blacktriangleright Learners will get an idea of pisces which are aquatic while			
Group Euchordata II	tetrapod are terrestrial, arborial and terrestrial animals,			
Unit III:	> Learners will understand the characteristic features and examples			
Group Euchordata III	of class of Reptilia, Aves and Mammalia			
Unit IV:	Learners will get an idea of vertebrate animal life after studying			
Type study: Shark	one representative animal - shark			
	Course Outcomes B. Sc Zoology			
	Semester-VI Paper II			
	Physiology and Tissue Culture			
Course	Outcomes			
After completion of these courses students should be able to;				
Unit I:	The learner shall understand fundamentals of enzyme structure,			
Enzymology	action and kinetics.			
	\succ The learner shall appreciate the enzyme assay procedures			
	and the therapeutic applications of enzymes			
Unit II:	The learner shall comprehend the adaptive responses of animals			
Homeostasis	to environmental changes for their survival			
Unit III:	The learner shall understand the types and secretions of			
Endocrinology	endocrine glands and their functions			
Unit IV:	\blacktriangleright he learner shall understand the significance of tissue culture as a			
Animal Tissue Culture	tool in specialized areas of research.			
	The learner will appreciate its applications in various industries.			
	Course Outcomes B. Sc Zoology			
	Semester-VI Paner III			
	Genetics and Bioinformatics			
Course	Outcomes			
After	ompletion of these courses students should be able to:			
Unit I:	Learner shall get an insight into the intricacies of chemical and			
Molecular Biology	molecular processes that affect genetic material.			
	The course shall prepare learner to recognize the significance of			
	molecular biology as a basis for the study of other areas of			
	biology and biochemistry.			
	Learner shall also understand related areas in relatively new			
	fields of genetic engineering and biotechnology			
Unit II:	> The learner shall get acquainted with the vast array of			
Genetic Engineering	techniques used to manipulate genes which can be applied in			
	numerous fields like medicine, research, etc. for human benefit.			
	\blacktriangleright			
Unit III:	The learner shall become aware of the impact of changes			
Human Genetics	occurring at gene level on human health and its diagnosis.			
Unit IV:	Learner shall become aware of the computational point of view			
Bioinformatics	of studying the genomes.			

Course Outcomes B. Sc Zoology Semester-VI Paper IV Environmental Biology and Zoopharmacognosy			
Course	Outcomes		
After completion of these courses students should be able to;			
Unit I:	Learner will understand the different factors affecting		
Environment	environment, its impact and environment management laws		
management			
Unit II:	Learner will be able to understand various methods for wildlife		
Wildlife Management	conservation.		
	Learner will be able to apply knowledge to overcome the issues		
	related to wildlife conservation and management.		
Unit III:	Learner will understand the paradigms of discovery and		
Bioprospecting and	commercialization of biological resources and knowledge		
Zoopharmacognosy	gained from self-medication observed in animals		
Unit IV:	The learners will become acquainted with how and why		
Zoogeography	different animal species are distributed around the globe.		