

Amrut Sevabhavi Sanstha , Parbhani  
Late Ku. Durga K. Banmeru Science College Lonar, Dist. Buldana  
**ACADMIC SESSION FROM 2017-2018 TO 2021-2022**

Personal Teaching Plan  
**Department of Zoology, Class :- B.Sc I yr      Sem-I**

Name of Lecture :**Dr. Milind V. Gaikwad**

Sr. No.	Month	Unit	Name of topic	Required Periods	Total period
1	July	I	Classification of Non-Chordata.	2	11
			Phylum Protozoa: General characters	1	
			Type study: Plasmodium vivax:	1	
			Structure, Life-cycle.	2	
			Parasitic protozoan and ,	2	
			human diseases': Malaria	1	
			Amoebiasis, Trypanosomiasis,	1	
			Leishmaniasis	1	
2	July- August	II	Phylum Porifera: General Characters	1	14
			Type study: Scypha: Habits and habitat	2	
			External features	1	
			cell types, spicules & Structure and	2	
			significances of canal system	1	
			Phylum Coelenterata:	1	
			General Characters	1	
			Type study Metridium Habits & habitat	1	
			External features,gastro-vascular cavity	2	
			Mesenteries, Reproduction	2	
3	August	III	Phylum Platyhelminthes	1	11
			General Characters	1	
			Type study: Fasciola hepatica:	1	
			Habits and habitat,External features	1	
			Digestive, Excretory, Reproductive	1	
			system and Life cycle.	1	
			Phylum Aschelminthes:	1	
			General Characters	1	
			Type study, Ascaris lumbricoides	1	

			Habits and habitat External features	2	
			Digestive, Excretory	1	
			Reproductive system and Life cycle	1	
4	August	IV	Phylum Annelida	1	13
			General Characters.	1	
			Type study: Leech: External features	1	
			Digestive, Excretory system	1	
			Reproductive system.	1	
			Phylum Arthropoda	2	
			General Characters	1	
			Type study: Cockroach	1	
			Habits and habitat, External features	1	
			Reproductive system	1	
			Type study: Pila globosa	1	
			Habits and habitat,	1	
			External features (Shell and Body)	1	
5	Sept.	V	Digestive, Respiratory Pila globosa	1	13
			Reproductive system Pila globosa	2	
			Phylum Echinodermata	1	
			General Characters	2	
			Type study: Asterias: Habits and habitat	1	
			External features,Digestive system	1	
			Water vascular system	1	
			Phylum Hemichordata	1	
			General Characters	1	
			Body organ ization of Balanoglossus	1	
			Affinities of Balanoglossus with	1	
			non-Chordata, and Chordata	1	
			Corals, coral-reefs	1	
			Parasitic adaptations in Helminthes	1	
			Morphological and physiological	2	
			Larval forms and their significance:	1	
			Amphiblastula	1	
			Planula, Trochophore, Bipinnaria,	1	
			Brachiolaria	1	
			<b>Total Period</b>	<b>26</b>	<b>26</b>

H.O.D.

Amrut Sevabhavi anstha , Parbhani

**Late Ku. Durga K. Banmeru Science College Lonar, Dist. Buldana**

**Academic Session 2017- 2018**

**Personal Teaching Plan**

**Department of Zoology**

**Class :- B.Sc I yr Sem-II**

**Name of Lecturer Dr.M.V.Gaikwad**

Sr. No.	Month	Unit	Name of topic	Required Periods	Total Period
1	DEC.	I	General organization of Prokaryote and Eukaryote Cell.	4	10
			Ultra structure and functions of, Plasma membrane	3	
			Ultra structure types and functions of, Endoplasmicreticulum	3	
2	DEC.	II	Ultra structure and functions of, Golgi complex	3	12
			Ultra structure and functions of Ribosome	3	
3	JAN	III	Ultra structure and functions of Mitochondria.	3	12
			Ultra structure and functions of Lysosomes.	3	
			Chromosome and its general organization.	4	
4	JAN- FEB.	IV	Structure of Polytene and Lamp brush Chromosome.	4	10
			Mitosis and its significance	2	
			Meiosis and its significance.	3	
			Gametogenesis: Spermatogenesis and oogenesis	2	
5	FEB.	V	Fertilization: Types of fertilization, Mechanism of fertilization	3	12
			Cleavage, and development up to coelome formation in amphioxus	3	
			Cleavage, Blastulation and gastrulation up to the formation of three germ layers in Frog, Fate map.	3	
			Cleavage, Blastulation and gastrulation up to the formation of three germ layers in chick.	3	
6	MAR- APRIL	VI	Extra embryonic membranes in chick: Development and significance.	3	10
			Placentation in mammals; Types and Functions of Placenta.	3	
			Parthenogenesis: Types and, Significance,	3	
			Regeneration in invertebrates and vertebrates.	1	

			Elementary idea of, sources, types and use of Stem cells	3	
			Total	22	22

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Amrut Sevabhavi Sanstha , Parbhani's  
Late Ku. Durga K. Banmeru Science College Lonar Dist Buldana      Acadmic Session  
2017- 2018

**Personal Teaching Plan Class :- B.Sc II yr    Semester-III Subject :- Zoology**

**Name” Dr.M.V.Gaikwad**

Sr. No.	Month	Unit	Name of topic	Required Perds	Total Period
1	July	I	Phylum Chordata Origin of Chordata.	1	20
			Protochordates	1	
			Type study: Amphioxus	1	
			Habits and habitat	1	
			External Characters -	1	
			Digestive system and feeding	1	
			Excretory organs, gonads	1	
			Affinities of Amphioxus	1	
			Affinities of .Agnatha Series Pisces:	1	
			Type study: Scoliodon sarokawah	1	
			(Dogfish) – Habits and habitat	1	
			External Characters, Digestive system	1	
			alimentary canal and digestive glands	1	
			Respiratory system	1	
			respiratory organ and mechanism	1	
			circulatory System: Structur	1	
			working of Heart	1	
			major arteries and veins	1	
			Lateral line receptors	1	
			Migration in fishes-Types	1	
			causes and significance	1	
2	Aug.	II	Class Amphibia	1	13
			Rana tigerina , Habits and habitat,	1	
			external, characters. Respiratory organs	1	
			Circulatory system; Structure of Heart	1	
			major arteries-veins,urinogenital system	1	
			Parental care in amphibia	1	
			Class Reptilia	1	

			Type study- Calotes versicolor	1	
			Habits and habitat, External characters	1	
			circulatory system- Structure of Heart	1	
			major arteries and veins	1	
			Urinogenital system	1	
			snake venom and anti-venom,	1	
1	Aug. Sept.	III	Migration in birds.	1	10
			Class Mammalia:Primitive mammals	3	
			salient features of Prototheria and	1	
			Metatheria, Morphology of mammalian	2	
			endocrine glands. Aquatic mammals.	4	
2	Sept.	IV	Evolution: Meaning and scope	1	13
			Indirect Evidences of evolution	1	
			Evidences of organic evolution-	1	
			morphological and anatomical,	1	
			physiological and biochemical embryological	1	
			Direct evidences of evolution	1	
			Paleontological evidences:	1	
			Fossils and fossilization: petrified fossils	1	
			dead and preserve bodies cast and moulds	1	
			trails and foot prints, condition for fossilizations	1	
			Radioactive carbon dating of fossils	1	
			Living fossils.Importance of fossil record	1	
			Evidences from connecting links	1	
			Peripatus and Archaeopteryx	1	
5		V	Evolutionary Processes:Natural selection	2	13
			Darwinism.Lamarckinsm.	1	
			Speciation - definition of species	1	
			mode of speciation	1	
			Allopatric and Sympatric speciation.	1	
			Modern concept of organic evolution	2	
			Darwinism.Population Genetic	1	
			Hardy –Weinberg equilibrium	1	
			Gene pool, Gene frequency, Genetic drift,	1	
			Convergent, Divergent and Parallel evolution	1	
			Coevolution	2	
			Adaptive radiations in mammals.	2	
			Evolution of Man- brief accounts of Parapithecus	1	

6	Oct.	VI	Dryopithecus, Ramapithecus, Australopithecus,	1	10
			Homocreatus Neanderthal man,	1	
			Cro-Magnon man and modern man.	2	
			Evolution of heart, aortic arches, and urinogenital	1	
			systems of vertebratesAnimal Adaptation: Desert	1	
			aquatic and terrestrial	1	
			Total	23	23

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Session 2017- 2018

Department of Zoology

### Personal Teaching Plan

Class :- B.Sc II yr Semester- IV

Name of Lecturer Dr. M.V.Gaikwad

Subject :- Zoology

Sr. No.	Month	Unit	Name of topic	Required Period	Total Period
1	DEC.	I	Concept of genes.Mendel's laws of hereditary	2	13
			Monohybrid	2	
			Laws of dominance, law of segregation. Dihybrid cross	2	
			Law of independent assortment. Interaction of genes	2	
			Supplementary factor, complementary factor,	2	
			duplicates factor, inhibitory factors, and lethal factors	2	
			dominant and recessive.	1	
2	DEC.	II	Linkage	1	13
			Types of linkage, linkage group, arrangement of linked genes, and significance of linkage.	1	
			Crossing over	1	
			Mitotic and meiotic crossing over,	1	
			Mechanism of crossing over, theories of crossing over	1	
			Darlington's theory,	1	
			Breakage and exchange theory,	1	
			copy choice theory. Types of crossing over	1	
			Single, double and multiple crossing overs	1	

			Factors affecting crossing over,	1	
			Significance of crossing over.	1	
			Multiple alleles. Multiple alleles in relation to eye color in	1	
			Drosophila.Blood group in man, Erythroblastosis foetalis	1	
1		III	Sex determination, Gynandromorphs.	1	13
			Genetic disorders; Sickle cell anemia, , Huntington's chorea.	1	
			Diabetes mellitus. Non-disjunction: Turner's syndrome,	1	
			Klinefelter's syndrome,Down's syndrome.Edwrds Syndrome	1	
			Biochemical genetics;;Cystic fibrosis,	1	
			Phenylketonuria, Albinism, Alkaptonuria, Goiters, cretinism.	1	
			Sex linked genetic disorders and their inheritance in man;	1	
			Hemophilia and color blindness.	1	
2	FEB.	IV	Parental,Carrier, Predictive, CVS Chorionic Villous Sampling	2	13
			Amniocentesis, Gene probe and DNA analysis	1	
			Genes in Human Heredity	1	
			Inheritance of eye color. Skin color.	1	
			Recessive genes and consanguineous marriages	1	
			Genetic	1	
			Inheritance of eye color. Skin color.	1	
			Recessive genes and consanguineous marriages	1	
			Genetic counseling, Risk of marriages in family	1	
			Birth control measures (male and female).	1	
			Kinds of twins identical, Fraternal, Siamese twins.	1	
			Significance of twins study	1	
1	MAR.	V	Ecology: concept and scope:Abiotic factors:Water:	1	14
			Properties, water problem in terrestrial and aquatic habitat.	1	
			Temperature Temperature range, Temperature tolerance, Effects of temperature on animals.	1	
			Homeotherms,	1	
			poikilotherms. Dormancy, hibernation, aestivation,diapauses	1	
			Light Spectral	1	
			distribution, Biological effects of light on aquatic and terrestrial animals: Reproduction, Metamorphosis,	1	
				1	



			pigmentation, vision, photo kinesis, phototropism,	1	
			photoperiodism, migration.	1	
			Biotic factors:	1	
			Intra specific and interspecific associations, Predation,	1	
			parasitism, Antagonism. , commensalisms, mutualism,	1	
			competition,(Gauzes Principle).	1	
2	MAR. APRI	VI	Ecosystem,Relationship between habitat , ecological niche	1	12
			Autotrophic and heterotrophic producer, consumer	1	
			Trophic level - energy flow in an ecosystem - food chain -	1	
			Food web - pyramids - Ecotypes. Homeostasis of ecosystem	1	
			Terrestrial ecosystem: Classification and Biomes,	1	
			Aquatic ecosystem: Fresh water ecosystem-Lentic and lotic	1	
			Ecosystem	1	
			Marine ecosystem: Characteristics, salinity, temperature -	1	
			Pressure, zonation and stratification Estuarine ecology:	2	
			Characteristics types, fauna and their adaptations.	2	
			TOAL	26	26

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Late Ku. Durga K. Banmeru  
Science College Lonar Dist Buldana  
Acadmic Sesson -2017- 2018  
Personal Teaching Plan  
Class :- B.Sc III yr Semester- V  
Subject :- Zoology  
Name of Lecturer: Dr.M.V. GAIKWAD

Sr.				Required	Total
No.	Month	Unit	Name of topic	Period	Period
1	July	I	Respiration:Structure of respiratory organs	1	14
			Gills and Lungs Mechanism of respiration	1	
			regulation of ventilation in lungs,	1	
			exchangeof gases at respiratory surface	1	
			Respiratory pigments in animals	1	
			Haemoglobin, Haemocyanin, Haemerythrin	1	
			chlorocruorin.Transport of gases:	1	
			Neurophysiologic control of respiration	1	
			Circulation:Blood :	1	
			Definition and its constituents	1	
			Heart: Structure of human heart	1	
			pace maker, Cardiac cycle.	1	
			Blood coagulation factors	1	
			blood groups A, B, O system and Rh-factor	1	
2	August	II	Muscle Physiology:Types of Muscles	1	11
			Types of Muscles: striated	1	
			non-striated and cardiac muscles	1	
			E.M. Structure and Chemical Composition	1	
			Neuromuscular junction	1	
			Mechanism of muscle contraction	1	
			by Sliding filament theory	1	
			Physical and Chemical changes	1	
			muscle twitch, tetanus, isometric and isotonic	1	

			summation of Stimuli, all or none law	1	
			fatigue, rigor mortis	1	
1		III	Nerve Physiology:Neuron	1	13
			E.M. Structure of neuron and Types	1	
			Myelinated and non-Myelinated nerve fibres	2	
			Conduction of Nerve impulse, Resting potential	1	
			initiation and propagation of action potential	1	
			Saltatory transmission, Neurotransmitters	1	
			Acetylcholine, dopamine, GABA, Serotonin,	1	
			Nor-Epinephrine Synapse&synaptic transmission	1	
			Chemical co-ordination:Endocrine system	1	
			Hormones and their physiological roles of Pituitary	1	
			Thyroid,Parathyroid,Adrenal,Islets of Langerhan's	2	
2	Sept	IV	Hormonal control of reproduction in both sexes	1	10
			Structure and physiology of mammalian Placenta	2	
			Homeostasis and conservative regulation	1	
			Osmoregulation and ionic regulation in aquatic life	2	
			Osmoregulation in terrestrial animals	1	
			Ammonotelism, ureotelism and uricotelism	1	
			Thermoregulation-Poikilotherms & Homeotherms	2	
			TOTAL	23	23

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Acadmic Sesson 2017- 2018

Personal Teaching Plan

Class :- B.Sc III yr Semester- V Subject :- Zoology

Name of Lecturer:,V.R. Mishra

Sr.				Required	Total
No.	Month	Unit	Name of topic	Period	Period
1	Sept-Oct.	V	Agricultural Zoology Economic importance of Insects	1	10
			Beneficial insects Spider, Mantis, Ladybugs	1	
			Damsel bug, Mealybug destroyer, Soldier beetle	1	
			Green lacewing, Syrphid fly, Tachinid fly,	1	
			Ichneumon wasp and Trichogramma wasp	1	
			Harmful Insects–Stired food grain pests	1	
			their injuries and control Pests of,– Cotton	1	
			Sugarcane and Jowar. Damage and Control	1	
			Economic of Rodents, Snakes, Owls and Bats	1	
			Apiculture - Sericulture	1	
2	Octomber	VI	Aquaculture Aquaculture–: definition	1	13
			scope, importance and present status in India	1	
			Fresh water fish culture types of fish ponds Nursery	1	
			rearing and stocking, design and construction	1	
			fertilizers used for fish development	1	
			Hatching Happas, Chinease Circular Hatchery	1	
			CIFE, Mumbai, hatching model, Induced breeding	1	
			hypophysation, Modern drugs used in fish breeding	1	
			Freshwater system: monoculture, polyculture	1	
			integrated aquaculture, cage culture, pen culture	1	
			Fishproducts&byproducts Fish liver Oil,Fish body oil	1	
			Fish manure, Fish leather	2	
			<b>Total</b>	<b>23</b>	<b>23</b>

H.O.D.

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Lonar Dist Buldana  
Acadmic Sesson 2017- 2018

Personal Teaching Plan

Class :- B.Sc III yr Semester- VI Subject :- Zoology

Name of Lecturer: V.R. Mishra

Sr.	Month	Unit	Name of topic	Required	Total
No.				Period	Period
1	DEC.	I	Transformation experiments - Bacteriophage infection	2	13
			Avery and co-workers experiments	2	
			Hershey and Chase experiment. Chemistry	2	
			types DNA(A,B,Z)Mitochondrial DNA;	1	
			Chemistry, types and function of RNA: mR	1	
			NA, tRNA and rRNA and Non Genetic RNA.	1	
2	DEC. JAN.	II	DNA replication: semi conservative method;	2	13
			Experiment by Messelson and Stahl.	2	
			Concept of genes, one gene one enzyme hypothesis,	2	
			one gene one Polypeptide theory.; A brief	2	
			account of Concept and action of cistron,	2	
			split genes, overlapping	1	
			genes, jumping genes, Genetic	1	
			diseases: Spinocerebellar ataxia.	1	
TOTAL				26	26

H.O.D.

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Lonar Dist Buldana

Acadmic Sesson -2017- 2018

Personal Teaching Plan

Class :- B.Sc III yr Semester- VI Subject :- Zoology

Name of Lecturer: DR.M.V.GAIKWAD

Sr.	Month	Unit	Name of topic	Required	Total
No.				Period	Period
1	JAN.	III	Genetic code and its features, Protein synthesis-	2	13
			transcription and processing of mRNA,	2	
			translation-different steps, Gene regulation:	2	
			(promoter and operator), Operon models,	2	
			Lac-operon model of E.Coli. Genetic regulation	2	
			Eukaryotes-Britten Davidson Model.	3	
2	FEB.	IV	mutations-significance of mutations.	2	10
			DNA repair process.	2	
			Polymerase chain reaction (PCR). Southern,	2	
			Northern and Western blotting techniques,	2	
			DNA finger printing.	2	
			TOTAL	23	23

H.O.D.

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Acadmic Sesson -2017-2018

Personal Teaching Plan

Class :- B.Sc III yr Semester- VI Subject :- Zoology

Name of Lecturer: Dr.M.V.Gaikwad

Sr.	Month	Unit	Name of topic	Required	Total
No.				Period	Period
2	MAR	V	Biotechnology:. Genetic Engineering: Recombinant	2	13
			DNA technology and gene cloning-enzymes	2	
			recombinant DNA technology, Splicing and cloning	2	
			vectors (plasmid and phage vectors), gene Transfer.	2	
			Somatic cell hybridization, hybridoma technology,	2	

			monoclonal antibodies Practical applications	1	
			hazards of biotechnology	1	
			Genetic engineering in animals	1	
6	MAR- APRIL	VI	Immunology: Introduction to immune system:	2	
			Innate and adaptive immunity,	2	
			production of immune cells ; Complement system.	2	
			Humoral Immunity: Antigen and haptens, Antibody	2	14
			types function, and production.	2	
			Cell mediated immunity: T-cell receptors	1	
			T helper cell and lymphocyte activation	1	
			Role of cytotoxic T-cell	1	
			ELIZA Technique RIA.	1	
			TOTAL	41	41

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