

Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2017 - 2018
Work Distribution

Class	Teachers			
	Dr. Chavhan A.B		Dr. Balkhande J.V.	
	Theory	Practicals	Theory	Practicals
B.Sc. I Sem I	Paper II	NIL	Paper I	Paper V
B.Sc. I Sem II	Paper IV		Paper III	
B.Sc. II Sem III	Paper VI	PAPER - X	Paper VII	paper XI
B.Sc. II Sem IV	Paper VIII		Paper IX	
B.Sc. III Sem V	Paper XII	PAPER- XVI &	Paper -XIII-D	PAPER-XVII
B.Sc. III Sem VI	Paper-XIV		Paper XV-D	

CSL

Head

Dr. Arvind B. Chavhan
Assistant Professor & Head
Department of Zoology,
Digambarrao Bindu ACS College,
Bhokar, Dist Nanded 431801



U.S.

Principal

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Digambarrao Bindu Arts, Com. & Sci. College
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Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2017 - 2018

Dr. Balkhande J V

B.Sc-I Year Semester – I

Subject: Zoology

Paper I

LIFE AND DIVERSITY OF ANIMALS - I

Month	Course Content	Theory	Practical	No. of Periods
Jul-17	Unit I(Paper I) 1. Introduction of Non-chordates 2. Concept of species and speciation 3. Protozoa: General Characters and classification up to class level. Plasmodium vivax: Life Cycle, Pathogen city and control measures. 4. Porifera: General Characters and classification up to class level. Sycon: General Morphology, different types of cells. Canal system in sponges.	11	12	23
Aug-17	Unit II 1. Coelenterata: General Characters and classification up to class level. Obelia: Structure and life history. Coral and coral reefs. 2. .Platyhelminthes: General Characters and classification upto class level. Fasciola hepatica: Structure and life cycle Taenia solium: Structure and life cycle. 3. Nematelminthes. Ascaris: Structure and life cycle.	11	12	23
Sep-17	Unit - III 1. Annelida: General Characters and classification up to class level. Leech: General Morphology, Digestive and Urinogenital system 2. Arthropods: General Characters and classification up to class level. Prawn: External Morphology, Digestive system, Respiratory system, Nervous system.Crustacean larvae. 1. Mollusca: General Characters and classification up to class level. Economic Importance of Mollusca.	15	12	27
Oct-17	Unit IV 2. Echinoderm: General Characters and Classification up to class level. Star Fish External Morphology and Water vascular system. 3. Hemichordates: General Characters and Affinities.	8	9	17

Total		45	45	90
B.Sc-I Year Semester –II Paper III:LIFE AND DIVERSITY OF ANIMALS – (II)				
Nov-17	Unit: I 1.General characters and classification of chordates 2. Protochordate: Urochordata: - General characters, concept of retrogressive metamorphosis.	6	6	12
Dec-17	Unit : II Cephalochordate: General Characters. 3. Agnatha: Cyclostomata: General characters of cyclostomes. Unit II 1. Pisces: General characters and classification of pisces upto class level. Migration in fishes. Scoliodon (Dogfish): External characters, Digestive system, Respiratory system, structure of heart and ventral aorta, Urinogenital system, Nervous system-brain and spinal chord.	14	9	23
Jan-18	Unit III 1. Amphibia:- General characters and classification upto to order level. Parental care in amphibians. 2. Reptillia: General characters and classification upto order level. Poisonous and Non poisonous snakes-identification only. 3. Aves: General characters and classification upto order level. Flight Adaptations in birds. Migration of birds.	11	12	23
Feb-18	Units IV 1. Mammals: General characters and classification up to order level. 2. Rat- External characters, Digestive system (Anatomy), Respiratory system, Circulatory system	9	12	24
Mar-18	Units IV Nervous system - Brain and spinal cord Eye and Ear,	5	6	12
Total Periods		45	45	90

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Month	Course Content	Theory	Practical	No. of Periods
Jul-17	Unit I 1) Comparative Anatomy of Vertebrates i) Integument. ii) Heart. iii) Kidney.	11	12	23
Aug-17	Unit II 1) Enzymes i) Nature and Classification of enzymes. ii) Mechanism of enzyme action. iii) Factors affecting on enzyme activity. 2) Nutrition i) Digestion of carbohydrate, proteins and lipids. ii) Vitamins Fat soluble and Water soluble vitamins (Sources, deficiency diseases and effects)	11	12	23
Sep-17	Unit - III 1. Respiration i) Definition of Aquatic and Aerial respiration. ii) Respiratory organs in man. iii) Mechanism of respiration. iv) Transport of O ₂ and CO ₂ 2) Circulation i) Blood- Composition and functions. ii) Structure and working of heart. iii) E.C.G. and Blood Pressure. iv) Blood clotting	11	12	23
Oct-17	Unit -IV 1 Excretion i) Modes of excretion in animals (Ammonotelism, ii) Structure of Kidney (v.s.). iii) Structure of Uriniferous tubule. iv) Physiology of urine formation. v) Composition of urine. 2) Nerve Physiology i) Structure and types of neurons. ii) Structure of Synapse. iii) Conduction of nerve impulse. 3) Muscle Physiology i) Types of muscle- smooth muscles, skeletal muscles and cardiac muscles. ii) Ultrastructure of skeletal muscles.	12	9	21
	Total	45	45	90

Paper IX: ENDOCRINOLOGY, HISTOLOGY AND BIOCHEMISTRY

Nov-17	Unit-1 1) Endocrinology i) Pituitary gland ii) Thyroid gland iii) Adrenal gland iv) Islet's of Langerhans (Pancreas)	11	12	23
Dec-17	Unit-II 1) Histology of mammalian organs and tissues i) Stomach ii) Intestine iii) Pancreas iv) Liver v) Kidney vi) Testes vii) Ovary	12	11	23
Jan-18	Unit-III 1) Carbohydrate metabolism i) Glycogenesis, Glycogenolysis and Gluconeogenesis ii) Glycolysis iii) Kreb's cycle	11	8	19
Feb-18	Units IV 1) Protein metabolism i) Deamination and Transamination ii) Ornithine cycle 2) Lipid metabolism i) B-oxidation ii) Ketosis, Ketogenesis and Ketolysis	11	8	19
Total Periods		45	39	84

Head

Dr. B. C. Chitambar
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Dr. B. K. Hande

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Dr. Balkhande J V

Annual Teaching Plan 2017-2018 B.Sc-III Year Semester – V


Subject: Zoology Paper- XIII (D) Applied Zoology- Environmental Biology -I

Month	Course Content	Theory	Practical	No. of
Jul-17	UNIT – I 1. Introduction in Biology 1.1 Atmosphere: Structure and composition 1.2 Hydrosphere: Physico-chemical properties of water 1.3 Lithosphere: Soil profile and process of soil formation 2. Biogeochemical Cycles 2.1. Hydrological Cycle 2.2. Nitrogen Cycle 2.3. Carbon Cycle 2.4. Sulphur Cycle	12	12	24
Aug-17	UNIT – II 3. Ecosystem 3.1 Concept and components 3.2 Energy flow in ecosystem 3.3 Ecological pyramids 3.4 Food chains and Food web 4. Marine Ecosystem 4.1 Zonation in- a) Marine habitat b) Intertidal habitat	11	11	22
Sep-17	UNIT – III 5. Biodiversity 5.1 Importance of Biodiversity 5.2 Threats to Biodiversity, habitat loss, poaching of wild 5.3 Biodiversity of India 5.4 Biodiversity conservation i) Ex-Situ conservation ii) In-Situ conservation	11	11	22
Oct-17	UNIT – IV 6. Wild life and its conservation 6.1 Aims of Wild life Conservation 6.2 Management and Conservation of wild life 6.3 Sanctuaries and Zoological Parks in Maharashtra Total	11	11	22
		45	45	90

Subject: Zoology Paper- XV (D) Environmental Biology-II

Month	Course Content	Theory	Practical	No. of Periods
Nov-17	UNIT – I 1. Introduction to Environmental Pollution 1.1 Biodegradable and Non-Biodegradable Pollutants 1.2. Water Pollution: Sources and Effects	11	6	17

	1.3 Pollution by Sewage and Domestic waste Eutrophication and Algal blooms 1.4 Pollution by Heavy Metals; Sources and effects of Lead			
Dec-17	UNIT – II 2. Air Pollution: Sources and Effects of Major Air Pollutants 2.1 Thermal Power Plants, Industrial Chimney Waste, Automobile Exhausts 2.2 Sulphate compounds as Air pollutants: Sources and Effects 2.3 Oxides of Nitrogen as Air pollutants: Sources and Effects 2.4 Carbondioxide and Carbon Monoxide as Pollutant: Sources and Effects 2.5 Acid rains 2.6 Ozone as a Protector and Destroyer 2.7 Chlorofluro Carbons (CFCs) 2.8 Photochemical Smog	12	15	27
Jan-18	UNIT – III 3. Environmental Pollution 3.1 Radioactive Pollution: Sources and Effects 3.2 Pollution by Solid Wastes 3.3 Noise Pollution: Sources and Effects	11	12	23
Feb-18	UNIT – IV 4. Pollution Control Legestallation 4.1 Environmental Protection Act 1986 4.2 Environmental Education in India 4.3 Water Resources: Infiltration, Gallflies and Wells 4.4 Water Treatment Methods: Sedimentation tank,	11	12	23
	Total	45	45	90


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B.Sc. I Sem I	Paper II	NIL	Paper I	Paper V
B.Sc. I Sem II	Paper IV		Paper III	
B.Sc. II Sem III	Paper VI	PAPER - X	Paper VII	paper XI
B.Sc. II Sem IV	Paper VIII		Paper IX	
B.Sc. III Sem V	Paper XII	PAPER- XVI &	Paper -XIII-D	PAPER-XVII
B.Sc. III Sem VI	Paper-XIV		Paper XV-D	

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Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2018 - 2019

Dr. Balkhande J V
B.Sc-I Year Semester – I

Subject: Zoology Paper I LIFE AND DIVERSITY OF ANIMALS - I

Month	Course Content	Theory	Practical	No. of Periods
Jul-18	Unit I(Paper I) 1. Introduction of Non-chordates 2. Concept of species and speciation 3. Protozoa: General Characters and classification up to class level. Plasmodium vivax: Life Cycle, Pathogen city and control measures. 4. Porifera: General Characters and classification up to class level. Sycon: General Morphology, different types of cells. Canal system in sponges.	11	12	23
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Sep-18	Unit - III 1. Annelida: General Characters and classification up to class level. Leech: General Morphology, Digestive and Urinogenital system 2. Arthropods: General Characters and classification up to class level. Prawn: External Morphology, Digestive system, Respiratory system, Nervous system. Crustacean larvae. 1. Mollusca: General Characters and classification up to class level. Economic Importance of Mollusca.	15	12	27
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Nov-18	Unit: I 1.General characters and classification of chordates 2. Protochordate: Urochordata: - General characters, concept of retrogressive metamorphosis.	6	6	12
Dec-18	Unit : II Cephalochordate: General Characters. 3. Agnatha: Cyclostomata: General characters of cyclostomes. Unit II 1. Pisces: General characters and classification of pisces upto class level. Migration in fishes. Scoliodon (Dogfish): External characters, Digestive system, Respiratory system, structure of heart and ventral aorta, Urinogenital system, Nervous system-brain and spinal chord.	14	9	23
Jan-19	Unit III 1. Amphibia:- General characters and classification upto to order level. Parental care in amphibians. 2. Reptillia: General characters and classification upto order level. Poisonous and Non poisonous snakes-identification only. 3. Aves: General characters and classification upto order level. Flight Adaptations in birds. Migration of birds.	11	12	23
Feb-19	Units IV 1. Mammals: General characters and classification up to order level. 2. Rat- External characters, Digestive system (Anatomy), Respiratory system, Circulatory system	9	12	24
Mar-19	Units IV Nervous system - Brain and spinal cord Eye and Ear,	5	6	12
Total Periods		45	45	90


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Month	Course Content	Theory	Practical	No. of Periods
Jul-18	Unit I 1) Comparative Anatomy of Vertebrates i) Integument. ii) Heart. iii) Kidney.	11	12	23
Aug-18	Unit II 1) Enzymes i) Nature and Classification of enzymes. ii) Mechanism of enzyme action. iii) Factors affecting on enzyme activity. 2) Nutrition i) Digestion of carbohydrate, proteins and lipids. ii) Vitamins Fat soluble and Water soluble vitamins (Sources, deficiency diseases and effects)	11	12	23
Sep-18	Unit - III 1. Respiration i) Definition of Aquatic and Aerial respiration. ii) Respiratory organs in man. iii) Mechanism of respiration. iv) Transport of O ₂ and CO ₂ 2) Circulation i) Blood- Composition and functions. ii) Structure and working of heart. iii) E.C.G. and Blood Pressure. iv) Blood clotting	11	12	23
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	Total	45	45	90

Paper IX: ENDOCRINOLOGY, HISTOLOGY AND BIOCHEMISTRY

Nov-18	Unit-I 1) Endocrinology i) Pituitary gland ii) Thyroid gland iii) Adrenal gland iv) Islet's of Langerhans (Pancreas)	11	12	23
Dec-18	Unit-II 1) Histology of mammalian organs and tissues i) Stomach ii) Intestine iii) Pancreas iv) Liver v) Kidney vi) Testes vii) Ovary	12	11	23
Jan-19	Unit-III 1) Carbohydrate metabolism i) Glycogenesis, Glycogenolysis and Gluconeogenesis ii) Glycolysis iii) Kreb's cycle	11	8	19
Feb-19	Units IV 1) Protein metabolism i) Deamination and Transamination ii) Ornithine cycle 2) Lipid metabolism i) B-oxidation ii) Ketosis, Ketogenesis and Ketolysis	11	8	19
Total Periods		45	39	84


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Dr. Balkhande J V

Annual Teaching Plan 2018-2019 B.Sc-III Year Semester – V

Subject: Zoology Paper- XIII (D) Applied Zoology- Environmental Biology -I

Month	Course Content	Theory	Practical	No. of
Jul-18	UNIT – I 1. Introduction in Biology 1.1 Atmosphere: Structure and composition 1.2 Hydrosphere: Physico-chemical properties of water 1.3 Lithosphere: Soil profile and process of soil formation 2. Biogeochemical Cycles 2.1. Hydrological Cycle 2.2. Nitrogen Cycle 2.3. Carbon Cycle 2.4. Sulphur Cycle	12	12	24
Aug-18	UNIT – II 3. Ecosystem 3.1 Concept and components 3.2 Energy flow in ecosystem 3.3 Ecological pyramids 3.4 Food chains and Food web 4. Marine Ecosystem 4.1 Zonation in- a) Marine habitat b) Intertidal habitat	11	11	22
Sep-18	UNIT – III 5. Biodiversity 5.1 Importance of Biodiversity 5.2 Threats to Biodiversity, habitat loss, poaching of wild 5.3 Biodiversity of India 5.4 Biodiversity conservation i) Ex-Situ conservation ii) In-Situ conservation	11	11	22
Oct-18	UNIT – IV 6. Wild life and its conservation 6.1 Aims of Wild life Conservation 6.2 Management and Conservation of wild life 6.3 Sanctuaries and Zoological Parks in Maharashtra Total	11	11	22
		45	45	90

Subject: Zoology Paper- XV (D) Environmental Biology-II

Month	Course Content	Theory	Practical	No. of Periods
Nov-18	UNIT – I 1. Introduction to Environmental Pollution 1.1 Biodegradable and Non-Biodegradable Pollutants 1.2. Water Pollution: Sources and Effects	11	6	17

	1.3 Pollution by Sewage and Domestic waste Eutrophication and Algal blooms 1.4 Pollution by Heavy Metals; Sources and effects of Lead			
Dec-18	UNIT – II 2. Air Pollution: Sources and Effects of Major Air Pollutants 2.1 Thermal Power Plants, Industrial Chimney Waste, Automobile Exhausts 2.2 Sulphate compounds as Air pollutants: Sources and Effects 2.3 Oxides of Nitrogen as Air pollutants: Sources and Effects 2.4 Carbondioxide and Carbon Monoxide as Pollutant: Sources and Effects 2.5 Acid rains 2.6 Ozone as a Protector and Destroyer 2.7 Chlorofluro Carbons (CFCs) 2.8 Photochemical Smog	12	15	27
Jan-19	UNIT – III 3. Environmental Pollution 3.1 Radioactive Pollution: Sources and Effects 3.2 Pollution by Solid Wastes 3.3 Noise Pollution: Sources and Effects	11	12	23
Feb-19	UNIT – IV 4. Pollution Control Legestaltion 4.1 Environmental Protection Act 1986 4.2 Environmental Education in India 4.3 Water Resources: Infiltration, Gallflies and Wells 4.4 Water Treatment Methods: Sedimentation tank,	11	12	23
	Total	45	45	90

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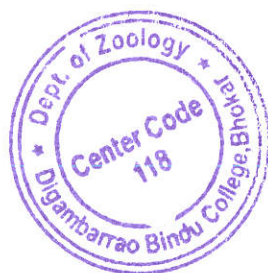
Dr. Balkhande

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Digambarrao Bindu Arts, Com. & Sci. College
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Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2019 - 2020
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Class	Teachers			
	Dr. Chavhan A.B		Dr. Balkhande J.V.	
	Theory	Practicals	Theory	Practicals
B.Sc. I Sem I	Paper II	NIL	Paper I	Paper V
B.Sc. I Sem II	Paper IV		Paper III	
B.Sc. II Sem III	Paper VI	PAPER – X	Paper VII	paper XI
B.Sc. II Sem IV	Paper VIII		Paper IX	
B.Sc. III Sem V	Paper XII	PAPER-XVI	Paper -XIII-D	PAPER- XVII
B.Sc. III Sem VI	Paper-XIV		Paper XV-D	
B.Sc. II	SEC		B.Sc. III	SEC



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Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2019 - 2020

Dr. Balkhande J V

B.Sc-I Year Semester – I

Subject: Zoology Paper I Biodiversity of Invertebrates

Month	Course Content	Theory	Practical	No. of Periods
Jul-19	Unit I(Paper I) 1. Introduction of Non-chordates Protozoa: General Characters and classification up to class level with suitable example Locomotory Organelles and locomotion in Protozoa. Plasmodium vivax: Life Cycle, Pathogenicity and control measures. 4. Porifera: General Characters and classification up to class level with suitable examples Canal System in Sycon; Economic importance of Porifera.	11	10	21
Aug-19	Unit II Coelenterata: General Characters and classification up to class level with suitable examples; Polymorphism in Hydrozoa Platyhelminthes: General characters and classification up to class level with suitable examples; Structure, Life Cycle, Pathogenicity and Control Measures of Taenia solium. Faciola hepatica: Structure and life cycle Taenia solium: Structure and life cycle. Nematelminthes: General characters and classification upto class Structure, Life Cycle, Pathogenicity and Control Measures of	12	10	22
Sep-19	Unit - III 1. Annelida: General Characters and classification up to class level with suitable examples. Metamerism in Annelida; vermiculture and vermicomposting General Morphology, Digestive and Urinogenital system 2. Arthropods: General Characters and classification up to class level with suitable examples. Vision in Arthropoda, Metamorphosis in Insects. Cockroach- External Morphology, Digestive system, Respiratory system, Nervous system. Economic importance of insects.	11	10	21
Oct-19	Unit IV Mollusca: General characters and classification up to class	11	0	11

	level with suitable examples; Economic importance of mollusca. Echinodermata: General characters and classification up to class level with suitable examples; Star Fish- External Morphology, Larval forms in Echinoderms. Hemichordates: General Characters and Affinities.			
	Total	45	30	75
B.Sc-I Year Semester –II Paper III: Comparative Anatomy of Vertebrates				
Nov-19	Unit: I General characters, origin and Ancestry of Vertebrates. Integumentary System: Development, General structure and function of integument; Derivatives of integument- Epidermal and Dermal derivatives; Skeletal System- Evolution of visceral arches; Comparative account of Limbs and girdles.	11		11
Dec-19	Unit : II Digestive System: Brief account of alimentary canal and digestive glands. Respiratory System: Brief account of different respiratory organs in vertebrates- Gills, lungs, skin, air sacs and Accessory respiratory organs.	12		12
Jan-20	Unit III Circulatory System: Brief account of Evolution of heart in vertebrates. Modifications of aortic arches in vertebrates; Blood circulation in various vertebrate groups- Single and Double circulation Urinogenital System: Developmental Succession of kidney, Evolution of urinogenital system in vertebrates.	11		11
Feb-20	Units IV Nervous System: Structure of Neuron; Comparative account of Brain of Vertebrates. Sense Organs - Types of receptors- Mechanoreceptors; Photoreceptors; Phonoreceptors.	11		11
	Total Periods	45		45

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Month	Course Content	Theory	Practical	No. of Periods
Jun-19	Unit I 1) Comparative Anatomy of Vertebrates i) Integument. ii) Heart. iii) Kidney.	11	12	23
Jul-19	Unit II 1) Enzymes i) Nature and Classification of enzymes. ii) Mechanism of enzyme action. iii) Factors affecting on enzyme activity. 2) Nutrition i) Digestion of carbohydrate, proteins and lipids. ii) Vitamins Fat soluble and Water soluble vitamins (Sources, deficiency diseases and effects)	11	12	23
Aug-19	Unit - III 1. Respiration i) Definition of Aquatic and Aerial respiration. ii) Respiratory organs in man. iii) Mechanism of respiration. iv) Transport of O ₂ and CO ₂ 2) Circulation i) Blood- Composition and functions. ii) Structure and working of heart. iii) E.C.G. and Blood Pressure. iv) Blood clotting	11	12	23
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Paper IX: ENDOCRINOLOGY, HISTOLOGY AND BIOCHEMISTRY

Nov-19	Unit-1 1) Endocrinology i) Pituitary gland ii) Thyroid gland iii) Adrenal gland iv) Islet's of Langerhans (Pancreas)	11	12	23
Dec-19	Unit-II 1) Histology of mammalian organs and tissues i) Stomach ii) Intestine iii) Pancreas iv) Liver v) Kidney vi) Testes vii) Ovary	12	11	23
Jan-20	Unit-III 1) Carbohydrate metabolism i) Glycogenesis, Glycogenolysis and Gluconeogenesis ii) Glycolysis iii) Kreb's cycle	11	8	19
Feb-20	Units IV 1) Protein metabolism i) Deamination and Transamination ii) Ornithine cycle 2) Lipid metabolism i) B-oxidation ii) Ketosis, Ketogenesis and Ketolysis	11	8	19
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Annual Teaching Plan 2019-2020 B.Sc-III Year Semester – V


Subject: Zoology Paper- XIII (D) Applied Zoology- Environmental Biology -I

Month	Course Content	Theory	Practical	No. of
Jun-19	UNIT – I 1. Introduction in Biology 1.1 Atmosphere: Structure and composition 1.2 Hydrosphere: Physico-chemical properties of water 1.3 Lithosphere: Soil profile and process of soil formation 2. Biogeochemical Cycles 2.1. Hydrological Cycle 2.2. Nitrogen Cycle 2.3. Carbon Cycle 2.4. Sulphur Cycle	12	12	24
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Aug-19	UNIT – III 5. Biodiversity 5.1 Importance of Biodiversity 5.2 Threats to Biodiversity, habitat loss, poaching of wild 5.3 Biodiversity of India 5.4 Biodiversity conservation i) Ex-Situ conservation ii) In-Situ conservation	11	11	22
Sep-19	UNIT – IV 6. Wild life and its conservation 6.1 Aims of Wild life Conservation 6.2 Management and Conservation of wild life 6.3 Sanctuaries and Zoological Parks in Maharashtra Total	11 45	11 45	22 90

Subject: Zoology Paper- XV (D) Environmental Biology-II

Month	Course Content	Theory	Practical	No. of Periods
Nov-19	UNIT – I 1. Introduction to Environmental Pollution 1.1 Biodegradable and Non-Biodegradable Pollutants 1.2. Water Pollution: Sources and Effects	11	6	17

	1.3 Pollution by Sewage and Domestic waste Eutrophication and Algal blooms 1.4 Pollution by Heavy Metals; Sources and effects of Lead			
Dec-19	UNIT – II 2. Air Pollution: Sources and Effects of Major Air Pollutants 2.1 Thermal Power Plants, Industrial Chimney Waste, Automobile Exhausts 2.2 Sulphate compounds as Air pollutants: Sources and Effects 2.3 Oxides of Nitrogen as Air pollutants: Sources and Effects 2.4 Carbon dioxide and Carbon Monoxide as Pollutant: Sources and Effects 2.5 Acid rains 2.6 Ozone as a Protector and Destroyer 2.7 Chlorofluoro Carbons (CFCs) 2.8 Photochemical Smog	12	15	27
Jan-20	UNIT – III 3. Environmental Pollution 3.1 Radioactive Pollution: Sources and Effects 3.2 Pollution by Solid Wastes 3.3 Noise Pollution: Sources and Effects	11	12	23
Feb-20	UNIT – IV 4. Pollution Control Legislation The Water (Prevention and Control of pollution) Act-1974 1.2 The Air (Prevention and Control of pollution) Act-1981 1.3 The Environment (Protection) Act- 1986 1.4 Environmental Education in India (Concept and role)	11	12	23
	Total	45	45	90


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Digambarrao Bindu Arts Comm., & Science College, Bhokar, Dist Nanded
Annual Teaching Plan for 2019-20

B.Sc-II Year Semester – III

Subject: Zoology Paper :VI GENETICS

Month	Course Content	Theory	Practical	No. of Periods
Jul-19	Unit I(Paper I)	11	12	23
	1) Introduction to Genetics			
	2) Mendelism			
	i) Mendel's Laws of inheritance			
	ii) Monohybrid, dihybrid cross and ratio.			
	iii) Incomplete dominance.			
	iv) Back cross and test cross.			
	3) Interaction of genes			
	i) Complementary factor (9:7)			
	ii) Supplementary factor (9:3:4)			
	iii) Inhibitory factor (13:3)			
	iv) Duplicate genes (15:1)			
Aug-19	Unit II	11	12	23
	1) Multiple Alleles and Genes			
	i) Inheritance of ABO Blood groups in Man.			
	ii) Rh factor and Erythroblastosis foetalis in man.			
	iii) Multiple genes – skin pigmentation in man.			
	2) Linkage and Crossing over			
	i) Linkage – definition, types and significance			
	ii) Crossing over – Mechanism of crossing over, Factor affecting crossing over, Significance of crossing over.			
Sep-19	Unit - III	12	12	24
	1. Sex determination			
	i) Chromosomal methods of sex determination.			
	ii) Bridge's ratio theory of genic balance.			
	2) Sex linked inheritance			
	i) Sex linked inheritance in Drosophila.			
	ii) Sex linked inheritance in man – colourblindness, haemophilia, Hypertrichosis			
	3) Cytoplasmic Inheritance-Ex. Kappa Particles (Paramecium)			
	4) Mutation			
	i) Chromosomal mutations – Structural alterations & Numerical alteration (Polyploidy).			
	ii) Gene mutations – Sickle Cell Anaemia.			
iii) Mutagenic agents.				
Oct-19	Unit -IV	11	9	20
	Human Genetics			
	i) Syndromes – Turner, Klinefelter, Down, Cat – Cry,			
	ii) Inborn errors of metabolism – Phenylketonuria (PKU),			
	iii) Human pedigree analysis with symbols.			
	2) Nature and functions of genetic materials.			
	i) DNA – structure, functions and replications			
ii) RNA – Structure, types and functions.				
iii) Genetic code				
Total	45	45	90	

B.Sc-II Year Semester –IV				
Paper VIII: GENETIC ENGINEERING AND EVOLUTION				
Nov-19	Unit-1	12	12	24
	1) Introduction of Genetic Engineering			
	2) Recombinant DNA Technology			
	i) Tools: - A) Enzymes: -			
	a) Lysing			
	b) Ligases			
	c) Nucleases (Exonucleases, Endonucleases, Restriction Endonucleases)			
	d) Synthetases (DNA polymerase, Reverse transcriptase)			
	B) Vectors: - Cloning vectors			
	(Plasmid -psBR322, Bacteriophage-Lambda phage, Virus-SV40, Cosmid vectors)			
	3) Techniques: -			
	i) Gel-Electrophoresis			
ii) PCR (Polymerase Chain Reaction)				
iii) Southern, Northern and Western Blotting.				
Dec-19	Unit-II	11	11	22
	1) Construction of rDNA			
	2) c-DNA libraries and Genomic libraries			
	3) Transgenesis and Transgenic animals (Transgenic cattle, sheep, pig and fish)			
	4) Cloning and cloned animals (Dolly sheep)			
	5) DNA fingerprinting.			
Jan-20	Unit-III	11	8	19
	1) Concept of Evolution			
	2) Theories of organic evolution			
	i) Lamarck's theory			
	ii) Darwin's theory			
	iii) Modern synthetic theory-Neo-Darwinism			
iv) Hugo De Vries theory				
Feb-20	Units IV	7	8	15
	1) Evidences of organic evolution			
	a) Anatomical			
	b) Embryological			
	c) Paleontological			
d) Biochemical				
Mar-20	2) Adaptations : Aquatic, Terrestrial, Fossorial, Volant and Desert.	4	6	10
	3) Hardy-Weinberg's law			
Total Periods		45	45	90

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Annual Teaching Plan for 2019-20

B.Sc-III Year Semester – V

Subject: Zoology Paper- XII Ecology & Zoogeography

Month	Course Content	Theory	Practical	No. of Periods
Jul-20	UNIT – I ECOLOGY 12 1. Introduction to ecosystem 1.1. Components of an ecosystem a) Abiotic components – Temperature & Water b) Biotic components – Producers, Consumers & Decomposers. 1.2. Pond ecosystem 1.3. Desert ecosystem 2. Spheres of Earth 2.1. Atmosphere 2.2. Lithosphere 2.3. Hydrosphere 2.4. Biosphere 2.5. Ecological Succession- Hydrarch and Xerarch 3. Bio-geochemical Cycles 3.1. Carbon Cycle 3.2. Oxygen Cycle	12	12	24
Aug-20	UNIT – II ECOLOGY 11 4. Population Ecology – Characteristics of Population 4.1 Natality 4.2 Mortality 4.3 Population density 4.4 Age distribution 4.5 Population Growth Form 5. Biotic interactions 5.1 Positive interactions – Commensalism, Mutualism 5.2 Negative interactions – Competition, Predation, Parasitism	11	11	22
Sep-20	UNIT – III ECOLOGY 11 6. Pollution – Sources, Effects and Control 6.1 Air Pollution 6.2 Water Pollution 6.3 Noise Pollution 7. Energy Resources 7.1 Conventional energy resources and their limitations 7.1.1 Fossil fuels 7.1.2 Nuclear power 7.1.3 Hydel power 7.2 Non-conventional energy resources – Advantages, Limitations & Latest developments 7.2.1 Solar energy 7.2.2 Wind energy 7.2.3 Tidal energy	11	11	22
Oct-20	UNIT – IV ZOOGEOGRAPHY AND ECOLOGICAL ADAPTATIONS 8. Wildlife conservation and endangered species 8.1 Aims & necessity of wildlife conservation 8.2 Wild life and Endangered species of India 8.3 Measures to protect endangered species 9. Zoogeographical Realms – Physical features and fauna 9.1 Australian realm 9.2 Indian / Oriental realm 10. Ecological Adaptations	11	11	22

10.1 Ecological adaptations of animals in Aquatic habitat.			
10.2 Ecological adaptations of animals in Desert habitat.			
Total	45	45	90

Subject: Zoology Paper- XVI Ethology, Biometry and Bioinformatics

Month	Course Content	Theory	Practical	No. of Periods
Nov-20	UNIT – I Ethology 1. Classification of Animal Behavior- 1.1. Inborn or stereotyped animal behavior – Taxis and Instincts with examples. 1.2. Acquired animal behavior – Imprinting, Conditioning, Habituation, Reasoning. 1.3 Social Behaviour in Insects –Honeybee.	6	6	12
Dec-20	UNIT – II Ethology 2. Communication in animals 2.1 Auditory Communication 2.2 Chemical Communication 2.3 Visual Communication 2.4 Tactile Communication 3. Mimicry and Colouration Introduction and Types of Mimicry- Protective, Conscious and Aggressive Introduction and Types of Colouration- Protective, Aggressive and Warning	12	12	24
Jan-20	UNIT – III Biometry 4. Collection and Classification of Data 4.1 Types of data - Geographical, Chronological, Quantitative, Qualitative, Continuous, Discontinuous. 4.2 Methods of collection of data 5. Measures of Central Tendency 5.1.Arithmetic Mean, Median and Mode 5.2.Measures of Variability – Standard Deviation & Standard Error 6. Graphic Representation of Data 6.1 Histogram 6.2 Pie Diagram 6.3 Polygon Frequency Curve	15	15	30
Feb-20	UNIT – IV Bioinformatics 7.1 Computer and their Applications in Biology 7.2 Internet and its uses 7.3 Search engines. 7.4 World wide web 7.5 Introduction to Bioinformatics. 7.6 Applications of Bioinformatics 7.7 Introduction to Biological Database a) NCBI b) Pub Med	12	12	24
Total		45	45	90



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Annual Teaching Plan for 2020 - 2021
Work Distribution

Class	Teachers			
	Dr. Chavhan A.B		Dr. Balkhande J.V.	
	Theory	Practicals	Theory	Practicals
B.Sc. I Sem I	Paper II	NIL	Paper I	Paper V
B.Sc. I Sem II	Paper IV		Paper III	
B.Sc. II Sem III	Paper VII	PAPER - X	Paper VI	paper XI
B.Sc. II Sem IV	Paper VIII		Paper IX	
B.Sc. III Sem V	Paper XII	PAPER-XVI	Paper -XIII-A	PAPER- XVII
B.Sc. III Sem VI	Paper-XIV		Paper XV-A	
B.Sc. II	SEC		BSc III - SEC	



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Annual Teaching Plan for 2020 - 2021

Dr. Balkhande J V

B.Sc-I Year Semester – I

Subject: Zoology Paper I Biodiversity of Invertebrates

Month	Course Content	Theory	Practical	No. of Periods
Jul-20	Unit I(Paper I) 1. Introduction of Non-chordates Protozoa: General Characters and classification up to class level with suitable example Locomotory Organelles and locomotion in Protozoa. Plasmodium vivax: Life Cycle, Pathogenicity and control measures. 4. Porifera: General Characters and classification up to class level with suitable examples Canal System in Sycon; Economic importance of Porifera.	11	3	14
Aug-20	Unit II Coelenterata: General Characters and classification up to class level with suitable examples; Polymorphism in Hydrozoa Platyhelminthes: General characters and classification up to class level with suitable examples; Structure, Life Cycle, Pathogenicity and Control Measures of Taenia solium. Fasciola hepatica: Structure and life cycle Taenia solium: Structure and life cycle. Nematelminthes: General characters and classification upto class Structure, Life Cycle, Pathogenicity and Control Measures of	12	4	16
Sep-20	Unit - III 1. Annelida: General Characters and classification up to class level with suitable examples. Metamerism in Annelida; vermiculture and vermicomposting General Morphology, Digestive and Urinogenital system 2. Arthropods: General Characters and classification up to class level with suitable examples. Vision in Arthropoda, Metamorphosis in Insects. Cockroach- External Morphology, Digestive system, Respiratory system, Nervous system. Economic importance of insects.	11	4	15
Oct-20	Unit IV Mollusca: General characters and classification up to class	11	4	15

Dr. Balkhande J V

Annual Teaching Plan 2020-2021 B.Sc-II Year Semester – III

Subject: Zoology Paper- VI Physiology

Month	Course Content	Theory	Practical	No. of Periods
Sep-21	UNIT-I 1. Digestion: Kinds of digestion-Intracellular and Extracellular Digestion Physiology of digestion in the alimentary canal. Absorption of Carbohydrates, Proteins, Lipids. 2. Vitamins: Sources and deficiency diseases of Fat soluble and Water soluble vitamins. 3. Respiration: Kinds of Respiration- Direct and Indirect Respiration. Respiratory organs in man. Mechanism of Respiration in man. Transport of O ₂ and CO ₂	11	4	15
Oct-22	UNIT – II 1. Excretion: Structure of Kidney, Structure of nephron. Mechanism of Urine formation (Ultra-filtration and tubular reabsorption) Counter-current Mechanism. 2. Cardiovascular system: Composition and functions of blood Types of heart in vertebrates: Neurogenic and Myogenic Structure and working of Human Heart. Origin and conduction of the cardiac impulse, Cardiac cycle E.C.G. and Blood Pressure	11	4	15
Nove-21	UNIT – III 1. Nerve Physiology: Structure of generalized neuron Types of neurons Structure of synapse Major Neurotransmitters- Acetyl choline, adrenaline & noradrenaline Conduction of nerve impulse 2. Muscle Physiology: Types of muscles- smooth muscles, skeletal muscles and cardiac muscles Ultra structure of skeletal muscles	11	4	15
Dec-21	UNIT – IV 1. Reproduction: Histological structure of human testes and ovaries. Physiology of male reproduction: hormonal control of spermatogenesis Physiology of female reproduction: hormonal control of oogenesis and pregnancy. 2. Endocrine Glands: Structure, functions and hormonal disorders of – Pituitary gland, Thyroid gland, Adrenal gland, Islet's of Langerhans	12	3	15
	Total	45	15	60

Subject: Zoology Paper- IX Evolutionary Biology & Genetic Engineering

Month	Course Content	Theory	Practical	No. of
Feb-22	UNIT – I 1. Introduction to theories of Evolution: Lamarckism, Darwinism, Neo-Darwinism, Hugo De V 2. Evidences of organic Evolution: i) Morphological and Anatomical evidences: Homolo structures and their evolution. ii) Physiological and Biochemical evidences: example iii) Embryological Evidences: examples, Biogenetic I iv) Palaeontological Evidences: Distribution of fossils conclusion drawn from fossil records (brief account). v) Taxonomical evidences: evolution based principles 3. Processes of Evolutionary Change: Organic variations; Isolating Mechanisms; Natural sele Types of natural selection (Directional, Stabilizing, Dis	12	4	
Mar-22	UNIT – II 1. Species Concept: Biological species concept (Advantages and Limitation lopotric, Sympatric). 2. Extinction: Mass extinctions in history of earth, Mass extinction- C 3. Adaptive radiation- Causes and significance, Adap 4. Hardy-Weinberg Principle- Hardy-Weinberg Equi berg Equilibrium	11	4	15
April-22	UNIT – III 1. Nature and functions of genetic materials. i. DNA – Structure, types and functions. ii. RNA – Structure, types and functions. iii. Genetic code 2. Introduction to Genetic Engineering 3. Recombinant DNA Technology i) Tools: - A) Enzymes: - a) Lysing b) Ligases c) Nucle Endonucleases, Restriction Endonucleases) d) Syntheta transcriptase) B) Vectors: - Cloning vectors (Plasmid -psBR322, Bac SV40, Cosmid vectors)	11	4	15
May-22	UNIT – IV 1. Techniques: i) Gel-Electrophoresis ii) PCR (Polymerase Chain Reaction) iii) Southern, Northern and Western Blotting. 2. Construction of rDNA 3. c-DNA libraries and Genomic libraries 4. Transgenesis and Transgenic animals (Transgenic ca 5. Cloning and cloned animals (Dolly sheep)	11	3	14

	6. DNA fingerprinting
	Total

45	15	60

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Annual Teaching Plan 2020-2021 B.Sc-III Year Semester – V

Subject: Zoology Paper- XIII (A) Pisciculture



Month	Course Content	Theory	Practical	No. of
Jul-20	UNIT – I 1. Fish Farm Engineering 1.1 Topography; 1.2 Soil type; 1.3 Water supply; 1.4 Layout of fish farm 2. Fish Farm Management 2.1 Preparation and Management of Nursery pond 2.2 Preparation and Management of Rearing pond 2.3 Preparation and Management of Stocking Pond	11	4	15
Aug-20	UNIT – II 1. Biology of Indigenous and Exotic carps. 2. Fish seed resources 2.1 Natural resources- Riverine resources 2.2 Artificial resources- Induced breeding by Hypophy a) Historical back ground b) Technique of Induced breeding c) Bundh breeding d) Chinese hatchery e) Striping method 2.3 Transportation of fish seed and brooders 3. Capture Fishery Introduction, Capture Fishery Resources in India. 1. Sardine fishery 2. Mackerel fishery 3. Bombay Duck fishery	12	4	16
Sep-20	UNIT – III 1. Fishing Methods 1.1 Gears - Traps, Gill nets, Cast nets, Drag nets 1.2 Crafts - Masula, Catamaron, Odum, Vanchi 1.3 Recent advances in fishing methods - Electrical Fi 2. Fish Diseases 2.1 Fish Diseases caused by Pathogens and Parasites- a) Bacterial- Dropsy, Furunculosis, Tailrot or Finrot b) Fungal- Gillrot, Dermatomyces c) Protozoan- Costiasis, Ichthyophithirius d) Helminth- Gyrodactylosis, Dactylogyrosis e) Arthropod- Lernaeasis, Argulusis 2.2 Non parasitic diseases- a) Environmental fish disea b) Nutritional / Dietary diseases	11	4	15
Sep-20	UNIT – IV 1. Fish Preservation and Processing a) Causes of spoilage of fishes b) Methods of fish preservation – Chilling, Freezing, Salting and Canning. 2. Fish By-products- Fish Oil (Fish Liver oil and Fish Fish Protein, Isinglass, Fish Glue, Fish Leather, Fish P	11	3	14

Total

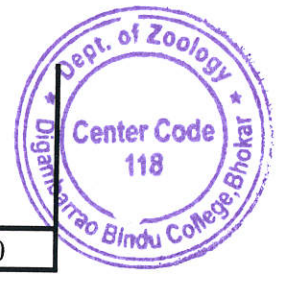
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Subject: Zoology Paper- XV (A) Aquaculture

Month	Course Content	Theory	Practical	No. of Periods
Nov-20	UNIT – I 1. Introduction to Aquaculture i) Definition, Scope and importance of aquaculture ii) Concepts of extensive aquaculture, intensive aquaculture 2. Types of Aquaculture i) Monoculture ii) Polyculture iii) Integrated fish farming – a) Paddy-cum fish culture b) Fish-cum pig farming c) Cattle-cum fish farming d) Fish-cum duck farming	11	3	14
Dec-20	UNIT – II 1. Culture Methods i) Pen culture ii) Cage culture 2. Sewage Fed Fish Culture i) Composition of sewage ii) Use of sewage for fish culture iii) Fish species suitable for sewage fed fish culture 3. Man Made Hazards and Aquaculture i) Domestic Sewage ii) Agricultural Sewage iii) Industrial Effluents	12	4	16
Jan-22	UNIT – III 1. Characteristics of Water i) Physical ii) Chemical ii) Biological 2. Larvivorous Fishes i) Characteristics of Larvicidal Fishes. ii) Larvicidal Fishes in India- Exotic species; Indigenous iii) Role of Larvivorous fishes in relation to Public health 3. Aquatic weeds and their control i) Types of weeds ii) Advantages and Disadvantages of weeds iii) Weed Control – Manual, Mechanical, Chemical and Biological	11	4	15
Feb-21	UNIT – IV 1. Culture of Non Fish Organisms 1. Fresh water Prawn Culture 2. Pearl Oyster Culture and Edible Oyster Culture 3. Mussel Culture 2. Mariculture i) Introduction	11	4	15



ii) Types of Mariculture
iii) Fish Species for Mariculture
3. Government Participation in Aquaculture
ICAR, Ministry of Agriculture, Ministry of Commerce

Total	45	15	60
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Annual Teaching Plan for 2021 - 2022
Work Distribution

Class	Teachers			
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	Theory	Practicals	Theory	Practicals
B.Sc. I Sem I	Paper II	NIL	Paper I	Paper V
B.Sc. I Sem II	Paper IV		Paper III	
B.Sc. II Sem III	Paper VII	PAPER - X	Paper VI	paper XI
B.Sc. II Sem IV	Paper VIII		Paper IX	
B.Sc. III Sem V	Paper XII	PAPER-XVI	Paper -XIII-A	PAPER- XVII
B.Sc. III Sem VI	Paper-XIV		Paper XV-A	
B.Sc. II	SEC		BSc III - SEC	



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DEPARTMENT: ZOOLOGY

ACADEMIC CALENDAR OF THE TEACHER 2021-22

Name of the Teacher: Dr. Jayvardhan V Balkhonde

Month	Class/ Paper	Course content	Stream:		Remarks (For committee)
			(Arts/ Commerce / Science)	Science	
			Planning		
			Expected Periods	Co-curricular/ Extra-Curricular	Research /e-contents
August 2021		Admission Process		1. Admission Process	1. Preparation of PPT's for development of e-contents. 2. Will Write article for Book chapter.
			2. NSS Audit Preparation.		
			3. Organization of International Conference		
September 2021	B.Sc. F.Y. (P-I)	Unit - I (Protozoa and Porifera) + Practicals	TH-11 PR-02	1. NSS activity Organization of Blood Donation Camp (27.09.2021)	1. Preparation of PPT's for development of e-contents. 2. Will write Research article on MRP.
	B.Sc. S.Y.(P- VI)	Unit- I (Digestion, Vitamins & Respiration) + Practicals	TH-11 PR-02	2. Will apply to do Online Refresher Course in Life Sciences.	
	B.Sc. T.Y. (P-XIII-A)	Unit- I (Fish Farm Engineering & Fish farm Management) + Practicals	TH11 PR-02	3. Science club activity	
	SEC- III	Unit- I (Vermiculture) + Practicals	11		
October 2021	B.Sc. F.Y. (P-I)	Unit - II (Coelenterata, Platyhelminthes & Nematelminthes) + Practicals	TH 12 PR-03	1. Plan to organize e-webinar on the occasion of Wild Life Conservation week.	1. Preparation of PPT's for development of e-contents. 2. Will write Research article.
	B.Sc. S.Y.(P- VI)	Unit-II (Excretion & Cardiovascular system) + Practicals	TH 11 PR-04	2. Study tour will organize to	
	B.Sc. T.Y. (P-XIII-A)	Unit- II (Biology of Indigenous and Exotic carps, Fish seed resources & Capture Fishery) + Practicals	TH 12 PR-04		

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Monitoring Committee

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ACADEMIC CALENDAR OF THE TEACHER 2021 - 22

SEC- III	Unit- II (Common species for Vermiculture & Application of Vermiculture) + Practicals	11	Government Fish Seed farm at Karakhed Tq. Degloor 3. Organization of Covid-19 Vaccination camp for the students. 4. NSS related activities. 5. Preparation of Notes.	
	Diwali Vacation			
November 2021	B.Sc. F.Y. (P-I)	TH 11 PR-05	1. Notes Preparation (Theory) 2. NSS related activities. 3. Preparation Students for various competitions. 4. Field visit will be organized to any KVK for observes the vermicomposting activities.	1. Preparation of PPT's for development of e-contents. 2. Preparation of Research Proposals.
	B.Sc. S.Y.(P- VI)	TH 11 PR-04		
	B.Sc. T.Y. (P-XIII-A)	TH 11 PR-04		
	SEC- III	11		


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ACADEMIC CALENDAR OF THE TEACHER 2021 - 22

December 2021	B.Sc. F.Y. (P-I)	Unit- IV (Mollusca, Echinodermata & Hemichordata) + Practicals	TH 11 PR- 03	1.NSS related activities AIDS awareness 2. Notes preparation (MCQ) 3. Students Seminar.	1. Uploading the e contents on YouTube and it will be send to students. 2. Will Write article for Book chapter.
	B.Sc. S.Y.(P- VI)	Unit- IV (Reproduction & Endocrine glands) + Practicals's	TH 12 PR- 04		
	B.Sc. T.Y. (P-XIII-A)	Unit- IV (Fish Preservation and Processing & Fish By-products) + Practicals	TH 11 PR- 05		
	SEC- III	Unit- IV(Vermicomposting) + Practicals	11		
January 2022	All Classes	Remaining syllabus , Revision & Discussion	TH-10 PR- 03	1.NSS related activities 2. Notes preparation (MCQ) 3. Students Seminar.	1. Preparation of PPT's for development of e- contents.
		Sem -III rd & V th University Examination Probable dates 17/01/2022 to 31/01/2022			
		Sem -I st University Examination Probable dates 21/01/2022 to 31/01/2022			
February 2022	B.Sc. F.Y. (P-III)	Unit -I (Integumentary System & Skeletal System) + Practicals	TH-11 PR- 04	1.Notes Preparation (Theory) 2. NSS related activities. 3. Preparation Students for various	1. Preparation of PPT's for development of e- contents. 2. Field visit will be organized for Research work nearby places.
	B.Sc. S.Y.(P- IX)	Unit -I (Introduction to theories of Evolution, Evidences of organic Evolution & Processes of Evolutionary Change) + Practicals	TH-12 PR- 03		
	B.Sc. T.Y. (P-XV-A)	Unit -I (Introduction to Aquaculture & Types of Aquaculture) + Practicals	TH11 PR- 03		
	SEC- IV	Unit -I (Introduction to Aquarium Keeping) + Practicals	11		

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DEPARTMENT: ZOOLOGY

ACADEMIC CALENDAR OF THE TEACHER 2021-22

March 2022	B.Sc. F.Y. (P-III)	Unit – II (Digestive System & Respiratory System) + Practicals	TH-12 PR-04	competitions. 4. Science Club activities. Celebration of National Science Day.(28 th Feb)	
	B.Sc. S.Y.(P- IX)	Unit – II (Species Concept, Extinction, Adaptive radiation & Hardy-Weinberg Principle) + Practicals	TH-11 PR-04	1.NSS related activities 2. Notes preparation.	1. Preparation of PPT's for development of e-contents. 2. Field visit will be organized for Research work nearby places.
	B.Sc. T.Y. (P-XV-A)	Unit – II (Culture Methods, Sewage Fed Fish Culture & Man Made Hazards and Aquaculture) + Practicals	TH11 PR-04	3. Work related to other committees. 4. Science Club activities.	
	SEC- IV	Unit – II (Construction of aquarium) + Practicals	11	Organization of Science Exhibition, Elocution, Seminar Competition etc.	
April 2022	B.Sc. F.Y. (P-III)	Unit- III (Circulatory System & Urinogenital System) + Practicals	TH-11 PR-03	1.NSS related activities	1. Participation in various seminar/conferences (Online/Offline mode).
	B.Sc. S.Y.(P- IX)	Unit- III (Nature and functions of genetic materials & Recombinant DNA Technology) + Practicals	TH-11 PR-03	2. Notes preparation (MCQ)	2. Preparation of

Principal

Monitoring Committee

Principal

Principal
 Digambarrao Bindu Arts, Com. & Sci. College
 Bhokar, To. Bhokar Dist. Nanded



ACADEMIC CALENDAR OF THE TEACHER 2021-22

May 2022	B.Sc. T.Y. (P-XV-A)	Unit- III (Characteristics of Water, Larvivorous Fishes & Aquatic weeds and their control) + Practicals	TH12 PR- 03	3. Students Seminar. 4. Visit to any local Aquarium shop for observes the various activities.	PPT's for development of e- contents.	
	SEC- IV	Unit- III (Setting of Aquarium) + Practicals	12			
June 2022	B.Sc. F.Y. (P-III)	Unit- IV (Nervous System & Sense Organs) + Practicals	TH-11 PR- 04	1.NSS related activities 2. Notes preparation (MCQ)	1. Uploading the e contents on YouTube and it will be send to students.	
	B.Sc. S.Y.(P- IX)	Unit- IV (Techniques, Cloning & DNA fingerprinting) + Practicals	TH-11 PR- 04			
	B.Sc. T.Y. (P-XV-A)	Unit- IV (Culture of Non Fish Organisms, Mariculture & Government Participation in Aquaculture) + Practicals	TH11 PR- 04	3. Students Seminar. 4. Organization of Test series for all classes.		
	SEC- IV	Unit- IV (Maintenance) + Practicals	12			
		Sem -II nd IV th & VI th University Examination Probable dates 30/05/2022 to 15/06/2022				