

K.T. S. P. Mandal's
Sahebraoji Buttepatil Mahavidyalaya, Rajgurunagar.

Department of Zoology

Teaching Plan

A.Y.-2022-2023 (Semester II)

S. Y. B. Sc.

Course Title: Animal Diversity - IV

Course Code: ZO – 241

Month	Title	Teacher Name
1st March	Introduction to class –Reptilia 1.1 Salient features of class Reptilia with one example (name only) – <i>Chelone, Calotes</i> . 1.2 Venomous and Non-venomous snakes – Cobra, Russell's viper, Rat snake, Grass snake. 1.3 Snake venom, symptoms, effect and cure of snake bite, first aid treatment of snakebite. 1.4 Desert adaptations in reptiles in brief.	DRB
April	Introduction to class –Aves 2.1 Salient features of class Aves with two examples (names only) – Sparrow, Parrot. 2.2 Flight adaptations in birds. 2.3 Types of Beaks and feet in birds. 2.4 Migration in birds – Altitudinal, Latitudinal	DRB
April	3. Introduction to class - Mammalia. 3.1 Salient features of class Mammalia with two examples (names only) – Rat, Rabbit. 3.2 Egg laying mammals. 3.3 Aquatic adaptations in mammals. 3.4 Flying adaptations in mammals. 3.5 Cursorial and fossorial adaptation in mammals	DRB
May	4. Study of Rat 4.1 Systematic position, habit and habitat. 4.2 External characters. 4.3 Digestive system, food and feeding. 4.4 Respiratory system. 4.5 Blood vascular system – Structure of Heart. 4.6 Nervous system – Central Nervous system only. 4.7 Sense organs – Structure and functions of Eye & Ear. 4.8 Reproductive system	DRB

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Prof. D. R. Bothade

Course Title - Applied Zoology II

Course Code - ZO-242

Semester- II

Month	Title	Teacher Name
1 st March	Apiculture: 1.1 An introduction to Apiculture, Systematic position, Study of habit, habitat and nesting behaviour of <i>Apis dorsata</i> , <i>Apis indica</i> , <i>Apis florea</i> and <i>Apis mellifera</i> . 1.2 Life cycle, Colony organization and Division of labour. 1.3 Bee behaviour and communication (Round Dance and Wag-Tail Dance) . 1.4 Bee keeping equipments : a) Bee box (Langstroth type), b) Honey extractor, c) Smoker, d) Bee-veil, e) Gloves, f) Hive tool, g) Bee Brush, h) Queen excluder	DRB
April	1.5 Bee keeping and seasonal management. 1.6 Bee products (composition and uses) : a) Honey, b) Wax, c) Bee Venom, d) Propolis, e) Royal jelly, f) Pollen. 1.7 Diseases and enemies of Bees : a) Bee diseases - Protozoan (Nosema), Bacterial (American foul brood), Viral (Sac brood), Fungal (Chalk brood). b) Bee pests - Wax moth (Greater and Lesser), Wax beetle. c) Bee predators - GreenBee eater, King crow, Wasp, Lizard. 1.8 Bee pollination and management of bee colonies for pollination.	DRB
April & May	2. Fisheries : 2.2 An introduction to fisheries and its types (in brief) : Freshwater fisheries, Marine fisheries, Brackish water fisheries. 2.3 Habit, habitat and culture methods of following freshwater forms : a) Rohu (<i>Labeo rohita</i>) , b) Catla (<i>Catla catla</i>) , c) Mrigal (<i>Cirrhinus mrigala</i>). 2.3 Harvesting methods of following marine forms: a) <i>Harpodon</i> , b) Mackerel, c) Pearl oyster.	DRB
May	2.4 Crafts and Gears in Indian Fishery: a) Crafts – Catamaran, Machwa, Dinghi. b) Gears – Gill net, Dol net, Rampani net, Cast net. 2.5 Fishery byproducts: a) Fish meal, b) Fish flour, c) Fish Liver oil, d) Fish manure, e) Fish fin soup. 2.6 Fish preservation technique: a) Chilling, b) Freezing, c) Salting, d) Drying, e) Canning	DRB

DRB

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Teaching Plan
A.Y.-2022-2023 (Semester II)

F. Y. B. Sc.

Course Code: ZO-121:

Animal Diversity II

Month	Title	Teacher Name
15 March	Phylum Aschelminthes 1.1 Introduction to phylum Aschelminthes 1.2 Salient features of Phylum Aschelminthes 1.3 Classification of Phylum Aschelminthes (Class Nematoda only with two examples – <i>Ascaris lumbricoides</i> (common round worm), <i>Wuchereria bancrofti</i> (Elephantiasis)). 1.4 Economic importance of class Nematoda.	DRB
April	Phylum Annelida 2.1 Introduction to Phylum Annelida 2.2 Salient features of Phylum Annelida. 2.3 Classification of Phylum Annelida up to classes with examples of following classes (names of examples only). Class Polychaeta (e.g: <i>Nereis pelagica</i> (<i>neries</i> / sand worm, <i>Aphrodita aculeata</i> (=Aphrodite/ seamouse) Class Oligochaeta (e.g.: <i>Pheritima posthuma</i> (earthworm), Class Hirudinea (e.g: <i>Hirudinaria granulosa</i> common cattle leech) 2.4 Economic importance of Annelida with reference to earthworms as friends of farmers and in their role in vermicomposting.	DRB
April	Phylum Arthropoda 3.1 Introduction to Phylum Arthropoda 3.2 Salient features of Phylum Arthropoda 3.3 Classification of Phylum Arthropoda with specific classes and mentioned examples (names only) Class:Crustacea: <i>Palaemon palaemon</i> (Prawn) <i>Brachyura</i> spp. crabs) Class: Chilopoda: <i>Scolopendra</i> sp. (centipede) Class: Diplopoda: <i>Julus</i> sp. (millipede) Class Insecta: <i>Periplaneta americana</i> (American Cockroach), <i>Anopheles stephensii</i> (mosquito). Class: Arachnida- Spiders, <i>Buthus</i> sp (scorpion)	DRB

	<p>3.4 mouth parts in insects: Mandibulate (cockroach), Piercing and sucking (female Anopheles mosquito), chewing and lapping type (honey bee)</p> <p>3.5 Economic importance of Arthropoda</p> <p>Useful Insects: Honey bee, Lac insect, Silkworm.</p> <p>Harmful insects: Female Anopheles mosquito, Red cotton bug, Rice weevil</p>	
May	<p>Phylum Mollusca</p> <p>4.1 Introduction to Phylum Mollusca</p> <p>4.2 Salient features of Phylum Mollusca</p> <p>4.3 Classification of Phylum Mollusca with specific classes and mentioned examples (names only)</p> <p>Class Gastropoda e.g <i>Pila globosa</i> (apple snail)</p> <p>Class Pelecypoda e.g <i>Lamellidens marginalis</i> (Bivalve)</p> <p>Class Polyplacophora e.g <i>Chiton</i></p> <p>Class: Cephalopoda e.g: <i>Octopus vulgaris</i> (common octopus), <i>Sepia officinalis</i> (common Cuttle fish)</p> <p>4.4 Economic importance of Mollusca.</p>	DRB
May	<p>Study of Phylum Echinodermata</p> <p>5.1 Introduction to Phylum Echinodermata</p> <p>5.2 Salient features of Phylum Echinodermata.</p> <p>5.3 Classification of Phylum Echinodermata with specific classes and mentioned examples (names only)</p> <ul style="list-style-type: none"> • Class Asterozoa (<i>Asterias rubens</i> sea stars or starfish) • Class: Holothurozoa. <i>Holothuria sp.</i> sea cucumbers) • Class: Echinozoa (<i>Echinus esculentus</i> common sea urchins) • Class: Crinozoa (sea lilies or feather stars) <p>5.4 Type study: <i>Asterias rubens</i> (Sea Star): Classification, Habit Habitat, External Morphology, Digestive system, Water vascular System and autotomy and regeneration</p> <p>5.5 Pedicellaria in Echinodermata: straight, crossed, valvate, tridactylous, globigerous.</p> <p>5.6 Economic importance of Echinodermata.</p>	DRB

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Prof. D. R. Bothade

Course Title: Cell Biology
 Course Code: ZO -122
 Semester II

Month	Title	Teacher Name
15 March	Introduction: 1.1 Introduction cell biology, 1.2 Cell as basic unit of life. 1.3 Importance of Cell Biology and its applications in industry. Overview of Cells 1.3 Introduction to Prokaryotic and Eukaryotic cells. 1.4 Structure and function of Prokaryotic (<i>E. coli</i>) 1.5 Structure and function of Eukaryotic cells (Animal and Plant Cell)	DRB
April	Techniques in Cell Biology: 3.1 Introduction 3.2 Microscopy: Basic Principle, Simple, Compound and applications of Electron Microscope. 3.3 Stains and dyes: Types of Stain: Acidic, basic and neutral. Dye (Preparation and chemistry of dyes not expected) 3.4 Micrometry.	DRB
April	Plasma Membrane: 4.1 Introduction 4.2 Structure of plasma membrane: Fluid mosaic model. 4.3 Transport across membranes: Active and Passive transport, Facilitated transport, exocytosis, endocytosis, phagocytosis – vesicles and their importance in transport. 4.4 Other functions of Cell membrane in brief Protection, cell recognition, shape, storage, cell signalling. 4.5 Cell Junctions: Tight junctions, gap junctions, Desmosomes.	DRB
April & May	Nucleus: Structure and function: 5.1 Introduction to Nucleus 5.2 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleoplasm, Nucleolus 5.3 Chromatin: Eu-chromatin and Hetro-chromatin, nature and differences. 5.4 Functions of nucleus apparatus, Lysosomes and vacuoles.	DRB
May	Endomembrane System 6.1 Introduction 6.2 Structure, location and Functions: Endoplasmic Reticulum, Golgi Mitochondria and Peroxisomes 7.1 Introduction 7.2 Mitochondria: ultrastructure and function of mitochondrion.	DRB
May	7.3 Peroxisomes Cell Division 7.1 Introduction 7.2 Cell cycle (G1, S, G2, M phases), 7.3 Mitosis. 7.4 Meiosis.	DRB

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