K. T. S. P. MANDAL'S

Sahebraoji Buttepatil Mahavidyalaya

Department of Zoology

Academic Year 2021-2022

Semester I

Teaching Plan

F. Y. B. Sc.

Course Title: Animal Diversity –I

Course Code: ZO – 112

Sr. No.	Month	Topics	Teacher
1	Oct	1. **Principles of Classification:** Taxonomy & Systematics 1.1 Taxonomy: Basic terminology and Introduction • Alpha, Beta and Gamma levels of taxonomy, Micro-taxonomy • Macro taxonomy: Phenetics (numerical taxonomy, Cladistics (Phylogenetic systematics), Evolutionary taxonomy (evolutionary systematics) • Classical taxonomy and experimental or neo taxonomy (biochemical taxonomy and Cytotaxonomy) • Significance of Taxonomy 1.2 Systematics: definition introduction 1.3 Linnaean system of classification (Six level classification: Phylum, class, order, family, genus, species) 1.4 Concept of Species: Biological & Evolutionary 1.5 Introduction to Binomial Nomenclature. 1.6 Introduction to Five kingdom system.	DRB
2	Oct	2. **General Features of kingdom Animalia** 2.1 General characters of Kingdom Animalia, Grades of organization 2.2 Symmetry.	DRB
3	Nov	3. **Kingdom Protista (Phylum: Protozoa)** 3.1 Introduction to Phylum Protozoa 3.2 Salient features of Phylum Protozoa 3.3 Classification of Phylum Protozoa up to classes with two examples of each class (names only). Class Rhizopoda (e.g: *Entamoeba histolytica, Arcella*),	DRB

		Class Mastigophora (e.g: *Euglena viridis, Trypanosoma gambiense*), Class Ciliata (e.g *Paramoecium caudatum, Opalina ranarum*), Class Sporozoa (e.g *Plasmodium vivax, Toxoplasma gondii*) 3.4 Locomotion in Protozoa: Amoeboid, Ciliary and Flagellar with suitable examples 3.5 Type Study: ***Paramecium caudatum***: Classification, Habit and Habitat, External morphology, Feeding and digestion, Excretion, Reproduction (binary fission and conjugation) 3.6. Economic importance of Protozoa (three harmful and one useful protozoan)	
4	Nov	3.6.1-**Harmful Protozoa**: *Plasmodium vivax* (malarial parasite), *Entamoeba histolytica* (Amoebic dysentery), *Trypanosoma gambiense* (Gambian sleeping sickness). 3.6.2- **Useful Protozoa**: *Trichonympha*	DRB
5	Nov	4. **Origin of Metazoa** 4.1 Introduction Origin and importance of Metazoa	DRB
6	Dec	5. **Phylum Porifera** 5.1. Introduction to Phylum Porifera 5.2 Classification of Phylum Porifera up to classes with two examples of each class (names only, no description of specimens). Class Calcarea (e.g.: *Leucosolenia, Sycon (Scypha)* Class Hexactinellida (e.g: *Euplectella* (venus flower basket), *Hyalonema* (glass sponge)) Class Demospongiae (e.g: *Chalina* (Mermaid's gloves, *Spongilla* (fresh water sponge)) 5.3 Canal system in sponges: Ascon, Leucon and Rhagon type. 5.4 Skeleton in sponges: Spicules, its types: Microscleres & Megascleres, Monoaxon – monactinal, diactinal, Amphidiscs, Triaxon, Polyaxon, Spongin fibres. 5.5 Regeneration in sponges. 5.6 Economic importance of Phylum Porifera.	DRB
7	Dec	6. **Phylum: Cnidaria**	DRB

		6.1 Introduction to Phylum Cnidaria 6.2 Salient features of Phylum Cnidaria 6.3 Classification of Phylum Cnidaria up to class level with given examples each class (names of examples only) Class Hydrozoa e.g.: Hydra, *Physalia* (Portuguese man of war) Class Scyphozoa e.g: *Aurelia* (Jelly fish), *Leucernaria* (trumpet shaped Jellyfish) Class Anthozoa: e.g; Metridium (Common sea anemone0 6.4 Polymorphism in Hydrozoa: Polyps & Medusa (polyp types: gastrozooids, dactylozooids, gonozooids) and functions 6.5 Economic importance of Cnidarians with reference to Corals and Coral reefs.	
8	Dec	7. **Phylum Platyhelminthes** 7.1 Introduction to Phylum Platyhelminthes 7.2 Salient features of Phylum Platyhelminthes 7.3 Classification of Phylum Platyhelminthes up to classes with two Examples each class (names of examples only). Class: Turbellaria (e.g: *Dugesia, Bipallium*) Class: Trematoda (e.g*: Fasciola hepatica, Schistosoma haematobium*) Class Cestoda: (*Taenia solium* (pork tape worm),*Echinococcus granulosus* (dog tapeworm) 7.4 Parasitic adaptations in Platyhelminthes: structural and physiological. 7.5 Economic importance of Platyhelminthes	DRB

DBorhade

Prof. D. R. Borhade

F. Y. B. Sc.

Course Title: Animal Ecology

Course Code: ZO 112

Sr. No.	Month	Topics	Teacher
1	Oct	1. **Introduction to Ecology** 1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology.	DRB
2	Oct	2. **Ecosystem** 2.1 Types of ecosystems: Aquatic (Freshwater, estuarine, Marine and terrestrial (Forest, Grassland and Desert) 2.2 Structure and Composition of Ecosystem (Abiotic components and biotic components. 2.3 Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, Ecological pyramids: Number, Biomass, and Energy. 2.4 concept of Eutrophication in lakes and rivers	DRB
3	Nov	3. **Population** 3.1Characteristic of population: Density, Natality, Mortality, Fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. 3.2Exponential and logistic growth, 3.3 Population regulation – density-dependent and independent factors. Population interactions, Gause's Principle with laboratory and field interactions, 3.4 Quadrate, line and belt transect methods.	DRB
4	Dec	4. **Community** 4.1Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect; Ecological succession with one example.	DRB
5	Dec	5. **Animal interactions** 5.1Introduction to Animal interactions	DRB

		5.2 Types of Animal interactions with at least to suitable examples of each 5.2.1-Competition: Inter specific and intraspecific5.2.2- Beneficial Associations: Commensalism (remora fish on shark, Cattle egrets on livestock), Mutualism (Termite and *Trichonympha*, bees and flowers, cleaning symbiosis in fish by prawns. 5.3 Antagonistic associations: Parasitism (*Ascaris* and man, lice and humans), Prey predation (Lion and deer).	

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Prof. D. R. Borhade

S. Y. B. Sc.

Course Title: Animal Diversity - III

Course Code: ZO – 231

Sr. No.	Month	Topics	Teacher
1	Oct	**1. Introduction to Phylum Chordata –** 1.1 Origin & Ancestry of Chordates. 1.2 Comparative account of fundamental characters of Chordates with Non Chordates. 1.3 Salient features of Phylum Chordata. 1.4 Classification of Phylum Chordata upto classes – Pisces, Amphibia, Reptilia, Aves, Mammalia.	DRB
2	Oct	**2. Introduction to Group – Protochordata.** 2.1 Salient features of Protochordata. 2.2 Salient features of subphylumswith two example each - Names only. Hemichordata – *Balanoglossus*and*Rhabdopleura*, Urochordata - *Herdmania*and*Salpa*, Cephalochordata –*Branchiostoma*(Amphioxus) and*Asymmetron*.	DRB
3	Nov	**3. Introduction to subphylum – Vertebrata** 3.1 Salient features of Vertebrata. 3.2 Introduction and General characters of sections with two examples - Names only. Agnatha–*Petromyzon & Myxine*& Gnathostomata–Frog & *Labeo*.	DRB
4	Nov	**4. Introduction to Class – Pisces** 4.1 Salient features of Class – Pisces. 4.2 Introductaionand Salient features of sections with two examples - Names only. Class – Chondrichthyes–*Scoliodon* and *Chimaera* & Osteichthyes – *Labeo* and *Catla* 4.3 Types of Scales in Fishes.	DRB

		4.4 Types of Fins in Fishes.	
5	Dec	**5. Introduction to Class – Amphibia** 5.1 Salient features of Class – Amphibia. 5.2 Introduction to order – Apoda–*Ichthyophis*, Urodela–*Salamandra*(Salamander) and& Annura - *Rana*. 5.3 Parental care in Amphibia.	DRB
6	Dec	**6. Study of *Scoliodon*** *Scoliodon* – 6.1 - Systematic position, Geographical distribution, Habit, Habitat 6.2 - External characters 6.3 - Digestive System, Food and feeding mechanism. 6.4 - Respiratory System – Structure of Holobranch only. 6.5- External & Internal Structure of heart, Working of heart. 6.6 - Nervous System – Brain only. 6.7 - Male urinogenital system & Female reproductive System. 6.8- Yolk sac placenta.	DRB

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Prof. D. R. Borhade.