

K. T. S. P. Mandal's
Hutatma Rajguru Mahavidyalaya, Rajgurunagar
Department of Zoology
A.Y. 2022-2023

F. Y. B. Sc. Zoology
Course Title: Animal Ecology
Course Code: ZO - 112

Sr.No	Month	Topics	Teacher
1	Sep	Introduction to Ecology 1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology.	PPS
2	Sep & Oct	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.	PPS
3	Oct	Population 3.1 Characteristic of population: Density, Natality, Mortality, Fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. 3.2 Exponential and logistic growth, 3.3 Population regulation – density-dependent and independent factors. Population interactions, Gause's Principle with laboratory and field interactions, 3.4 Quadrates, line and belt transect methods.	PPS
4	Nov	Community 4.1 Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect: Ecological succession with one example.	PPS
5	Nov	Animal interactions 5.1 Introduction to Animal interactions 5.2 Types of Animal interactions with at least to suitable examples of each 5.2.1- Competition: Interspecific and intraspecific 5.2.2- 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).	PPS

As per above mention 95% theory syllabus of Semester I completed and remaining will be complete in last week of November.


Prof. P. P. Shindekar

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Hutatma Rajguru Mahavidyalaya, Rajgurunagar.

Department of Zoology
Syllabus Completion Report
A.Y.2022-2023(Semester II)

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

Month	Title	Teacher Name
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)	PPS
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.	PPS
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.	PPS

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.	PPS
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.	PPS
May	7.3 Peroxisomes Cell Division 7.1 Introduction 7.2 Cell cycle (G1, S, G2, M phases), 7.3 Mitosis. 7.4 Meiosis.	PPS

As per mention above 70% Syllabus is completed. Remaining Syllabus will be complete up to Last week of May.

