

K. T. S. P. Mandal's
Hutatma Rajguru Mahavidyalaya, Rajgurunagar.
Department of Zoology
Syllabus Completion Report (A.Y.2024–2025)

F.Y. B. Sc. Zoology

Course Title: Cell Biology and Biomedical Techniques (T), Course Code: ZOO - 151 - T

Sr. No	Month	Topics	Teacher
1	Dec	Overview of Cells : 1.1 Prokaryotic (<i>E. coli</i>) and Eukaryotic (Plant & Animal) cells. 1.2 Microscopy – Simple and Compound microscope. 1.3 Micrometry. 1.4 Types of Stains: Acidic, Basic and Neutral.	DNB
2	Jan	Plasma Membrane: 2.1 Models of plasma membrane. 2.2 Transport across membranes: Active and Passive transport, Facilitated transport, endocytosis, exocytosis. 2.3 Cell – Cell Junction: Structure and function, Tight junctions, Adherent junctions, Gap junctions, Desmosomes and Hemi-desmosomes.	DNB
3	Jan	Cell organelles: Structure and functions - 3.1 Nucleus and nuclear pore complex. 3.2 Endoplasmic Reticulum. 3.2 Golgi Complex. 3.3 Lysosomes. 3.4 Ribosome. 3.5 Peroxisomes. 3.6 Mitochondria.	DNB
4	Feb	Cell Division: 4.1 Cell Cycle. 4.2 Mitosis. 4.3 Meiosis.	DNB
5	Feb	Introduction and Scope of Biomedical Techniques. 5.1 Lab safety techniques and sterilization.	DNB
6	Feb	Laboratory Instruments: Introduction, principle and working - 6.1 Centrifugation. 6.2 Chromatography. 6.3 Spectroscopy. 6.4 Electrophoresis. 6.5 Microtomy.	DNB
7	March	Biomedical Instruments: Introduction, Principle & Brief working of - 7.1 Electrocardiography (ECG). 7.2 Ultrasound / Sonography. 7.3 Polymerase Chain Reaction (PCR).	DNB

8	March 1	Clinical Techniques: Introduction and working principle. 8.1 Blood collection. 8.2 Anticoagulants. 8.3 Preparation and staining of blood smears. 8.4 Differential Leucocyte Count. 8.5 Hemocytometry (RBC and WBC). 8.6 Hemoglobin estimation.	DNB
9	April	Urine analysis: 9.1 Collection of urine sample. 9.2 Preservation of urine sample. 9.3 Routine urine analysis – Physical, bio-chemical and microscopic examination.	DNB

As per mention above 100% syllabus of Semester II is completed.

Prof. D. N. Birhade



S. Y. B. Sc.
Course Title: Animal Diversity - IV
Course Code: ZO – 241

Month	Title	Teacher Name
Jan	Introduction to class –Reptilia Salient features of class Reptilia with one example (name only) – <i>Chelone</i> , <i>Calotes</i> . Venomous and Non-venomous snakes – Cobra, Russell's viper, Rat snake, Grass snake. Snake venom, symptoms, effect and cure of snake bite, first aid treatment of snakebite. Desert adaptations in reptiles in brief.	DNB
Feb	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	DNB
March	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	DNB
April	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	DNB

As per mention above 100% syllabus of Semester IV is completed.

Prof. D. N. Birhade



