

DEPARTMENT OF ZOOLOGY
SAROJINI NAIDU COLLEGE FOR WOMEN

ACADEMIC CALENDAR

SEMESTER 2

CORE COURSE - III (ZOOACOR03T)
NON-CHORDATES II

UNITS	TOPICS	SUB TOPICS	ALLOTTED TEACHER	NO. OF CLASS	MONTH COVERED
1.	Introduction to Coelomates	Evolution of coelom and metamerism.	SAB	2	January
2.	Annelida	General characteristics and Classification up to classes. Excretion in Annelida.	SAB	10	February
3.	Arthropoda	General characteristics and Classification up to classes. Vision and Respiration in Arthropoda. Metamorphosis in Insects. Social life in bees and termites.	NK	17	January February
4.	Onychophora	General characteristics and Evolutionary significance.	BM	4	January
5.	Mollusca	General characteristics and Classification up to classes. Respiration in Mollusca. Torsion and detorsion in Gastropoda. Pearl formation in bivalves. Evolutionary significance of trochophore larva.	SAB + BM	10	February March April
6.	Echinodermata	General characteristics and Classification up to classes. Water-vascular system in Asteroidea. Larval forms in Echinodermata. Affinities with Chordates.	NK	12	March April
7.	Hemichordata	General characteristics of phylum Hemichordata. Phylogenetic relationship with non-chordates and chordates (only recent concept)	SAB	5	March

CORE COURSE-III (ZOOACOR03P)
NON-CHORDATES II: LAB

UNITS	TOPICS	SUB TOPICS	ALLOTTED TEACHER	NO. OF CLASS	MONTH COVERED
1. A)	Study of	Annelids – <i>Aphrodita, Nereis, Heteronereis, Sabella, Serpula, Chaetopterus, Pheretima, Hirudinaria.</i>	SAB	8	January February
B)		Arthropods – <i>Limulus, Palamnaeus, Palaemon, Dephnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta, termites and honey bees.</i>	MB + NK	12	January February March
C)		Onychophora – <i>Peripatus.</i>	BM	1	April
D)		Molluscs – <i>Chiton, Dentalium, Pila, Doris, Helix, Unio, Ostrea, Pinctada, Sepia, Octopus, Nautilus.</i>	SB	4	March April May
E)		Echinodermates – <i>Pentaceros / Asterias, Ophiura, Clypeaster, Echinus, Cucumaria and Antedon.</i>	NK	5	March April
F)		Hemichordates – <i>Saccoglossus.</i>	SAB	1	March
2.	Study of Systems	Digestive system, Septal nephridia and pharyngeal nephridia of earthworm	MB/SAB/ NK	5	February
3.	Study of Tissues	T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.	MB/SAB/ NK	4	February
4.	Study of Non-Chordates.	Mount of mouth parts and dissection of digestive system and nervous system of <i>Periplaneta.</i>	MB/SAB/ NK	10	February March
5.		To submit a Project Report (mostly literature review) on any related topic to larval forms. (crustacean, mollusc and echinoderm)	MB, SAB, SB, NK	10	April

CORE COURSE- IV (ZOOACOR04T)
CELL BIOLOGY

UNITS	TOPICS	SUB TOPICS	ALLOTTED TEACHER	NO. OF CLASS	MONTH COVERED
1.	Overview of Cells	Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions.	TP	3	February, March
2.	Plasma Membrane	Various models of plasma membrane structure. Transport across membranes: Active and Passive transport, Facilitated transport. Cell junctions: Tight junctions, Desmosomes, Gap junctions. Extracellular Matrix-Cell Interactions.	MB	7	January, February, March
3.	Endomembrane System	Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes.	SB	10	February
4.	Mitochondria and Peroxisomes	Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain, Chemi-osmotic hypothesis Peroxisomes.	SB	8	March
5.	Cytoskeleton	Structure and Functions: Microtubules, Microfilaments and Intermediate filaments.	SB2	8	April
6.	Nucleus	Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus Chromatin: Euchromatin and Heterochromatin and packaging (nucleosome)	SB	12	April
7.	Cell Division	Mitosis and Meiosis. Cell cycle and its regulation. Cancer. (Concept of oncogenes and tumor suppressor genes.) Mechanisms of cell death: brief overview.	MB	8	March, April, May
8.	Cell Signaling	Cell signaling transduction pathways; Types of signaling molecules and receptors GPCR and Role of second messenger. (cAMP)	TP	4	March, April

**CORE COURSE-IV (ZOOACOR04P)
CELL BIOLOGY LAB**

UNITS	TOPICS	SUB TOPICS	ALLOTTED TEACHER	NO. OF CLASS	MONTH COVERED
1.	Study of Mitosis	Preparation of temporary stained squash of onion root tip to study various stages of mitosis.	MB + SN	8	January
2.	Study of Meiosis	Study of various stages of meiosis (in pre-prepared slides and / or in photographs obtained from websites).	MB + SN	16	February
3.	Study of Chromosome	Preparation of permanent slide to show the presence of Barr body in human female blood cells / cheek cells.	MB + SN	8	March
4.	Demonstration of Cellular Macromolecule	Preparation of permanent slide to demonstrate: a. DNA by Feulgen reaction b. Mucopolysaccharides by PAS reaction. c. Proteins by Mercurobromophenol blue / Fast Green.	TP + NK	8+6+6	March April
5.		Cell viability study by Trypan Blue staining.	TP + NK	8	January February

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