



Department of Botany Maulana Azad College

8, Rafi Ahmed Kidwai Road, Kolkata - 700013
Email: botany@maulanaazadcollegekolkata.ac.in
Website: <https://maulanaazadcollegekolkata.ac.in>

Syllabus: [View](#)

Curriculum / Lesson Plan : 2022-23

Undergraduate Honours / General Course (CBCS) under University of Calcutta

Semester, [Honours / General], [Period of Semester]	Course Code	Course Name	Brief Description of the Topics	Name of the Faculty	No. of Lectures
Sem - I Honours (July - December)	CC - 1 (TH & PR)	PHYCOLOGY AND MICROBIOLOGY	PHYCOLOGY: General account, Classification, Cyanobacteria, Bacillariophyta, Life History	Mrs. Anima Saha	30
			MICROBIOLOGY: Details about the various aspects of Viruses and Bacteria	Dr. Madhuvanti Chatterjee	30
	CC - 2 (TH & PR)	MYCOLOGY AND PHYTOPATHOLOGY	MYCOLOGY : General Account, Classification of Fungi, Life History of some genera, Mycorrhiza, Lichen.	Dr. Naim Uddin	30
			PHYTOPATHOLOGY : Terms and Definitions, Host-Parasite Interaction, Study of plant diseases & Disease Management	Dr. Sukanya De	30
Sem - I General (July - December)	GE - 1	PLANT DIVERSITY	PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY)	Dr Sukanya De	60
Sem - II Honours (January - June)	CC - 3 (TH & PR)	PLANT ANATOMY	ANATOMY: Cell wall, Stomata, Stele, Primary structure of stem and root, Secondary growth, Mechanical tissues, Developmental Anatomy, Ecological Anatomy, Scope of plant anatomy	Dr. Madhuvanti Chatterjee	60
	CC - 4 (TH & PR)	ARCHAEGONIATE	BRYOPHYTES: General Account, Life History, Phylogeny & Importance.	Dr. Naim Uddin	38
PTERIDOPHYTES: General Account, Life History, Telome Concept, Heterospory & Economic Importance. Gymnosperms: Classification, Progymnosperms, Life History & Economic			Smt. Anima Saha	22	
Sem - II General (January - June)	GE - 2	PLANT DIVERSITY	PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY)	Dr Sukanya De	60



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Sem-III Honours (July - December)	CC - 5 (TH & PR)	PALAEOBOTANY & PALYNOLOGY	PALAEOBOTANY & PALYNOLOGY Introduction, Plant Fossil, Fossil Pteridophytes, Fossil gymnosperms, Indian Gondwana System, Palynology, Applied Palynology	Dr Partha Roy	60
	CC - 6 (TH & PR)	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS	MORPHOLOGY OF ANGIOSPERMS	Smt. Anima Saha	30
			EMBRYOLOGY Pre-fertilisation changes, Fertilisation, Post-fertilization changes	Dr. Naim Uddin	22
			Apomixis & Polyembryony:	Dr Sukanya De	8
	CC - 7 (TH & PR)	PLANT SYSTEMATICS	Introduction, Nomenclature, Systems of classification, Phenetics and Cladistics, . Data sources in Taxonomy	Dr Debabrata Mukhopadhyay	48
			Diagnostic features, Systematic position (Bentham & Hooker and Cronquist), Economically important plants (parts used and uses)	Smt. Anima Saha	12
Sem-III General (July - December)	GE - 3	Cell Biology and Genetics; Microbes	Cell Biology, Chromosomal aberrations, Central Dogma, Genetic Code, Linkage group and Genetic map, . Mutation, Brief concept of Split gene, Transposons	Dr. Sukanya De and Dr. Madhuvanti Chatterjee	
Sem IV Honours (January- June)	CC - 8 (TH & PR)	PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION	Phytogeographical regions, . Endemism, ECOLOGY: Preliminary idea, Community ecology, . Conservation of Biodiversity. EVOLUTION	Dr. Naim Uddin	60
	CC - 9 (TH & PR)	ECONOMIC BOTANY	Origin of cultivated crops, rice and wheat, Legumes, Sugar and starches, Spices, Beverages, Oil and fats, Drug-yielding plants, Timber, Fibers	Smt. Anima Saha	60
	CC - 10 (TH & PR)	GENETICS	Introduction, Linkage, Crossing over and Gene Mapping, . Epistasis and Polygenic inheritance in plants, Aneuploidy and Polyploidy, Chromosomal aberration, Mutation, Structural organisation of Gene	Dr. Madhuvanti Chatterjee	60
	SEC - B	Mushroom Culture Technology	Introduction, Cultivation technology, Storage and nutrition, Food preparation	Dr. Naim Uddin	30



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Sem IV General (January-June)	GE - 4	PLANT PHYSIOLOGY AND METABOLISM	Proteins, Transport in plants, Transpiration, Photosynthesis, Respiration, Nitrogen metabolism, Plant Growth regulators, Photoperiodism, Senescence	Dr. Sukanya De and Dr. Debabrata Mukhopadhyay	
Sem V Honours (June-December)	CC - 11 (TH & PR)	CELL AND MOLECULAR BIOLOGY	Origin and Evolution of Cells, Nucleus and Chromosome, Cell cycle and its regulation, MOLECULAR BIOLOGY: DNA Replication, Transcription and Translation (Prokaryotes & Eukaryotes), Gene Regulation, Genetic Code, Recombinant DNA Technology Restriction endonuclease, Development and causes of Cancer	Dr. Madhuvanti Chatterjee	60
	CC - 12 (TH & PR)	BIOCHEMISTRY	Biochemical Foundations, . Molecules of life, Energy flow and enzymology, Cell membrane, Phosphorylation	Dr. Debabrata Mukhopadhyay	60
	DSE - A (TH & PR)	INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY	Scope of microbes Bioreactors/ Fermenters, Microbial production of industrial products, Microbial enzymes, Microbes and quality of environment, Microbial flora of water, Microbes in agriculture	Dr. Naim Uddin	60
	DSE - B (TH & PR)	PLANT BIOTECHNOLOGY	Plant tissue culture Callus culture, Plant regeneration, Haploid Culture, Protoplast Culture, . Plant Genetic Engineering	Dr. Madhuvanti Chatterjee	60



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Sem VI Honours (January - July)	CC - 13 (TH & PR)	PLANT PHYSIOLOGY	Plant-water relations Mineral nutrition Organic Translocation. Plant Growth Regulators Photomorphogenesis Seed dormancy, Physiology of Senescence and Ageing.	Dr Debabrata Mukhopadhyay	60
	CC - 14 (TH & PR)	PLANT METABOLISM	Concept of metabolism Photosynthesis Respiration . Nitrogen Metabolism . Lipid metabolism signal transduction	Dr Debabrata Mukhopadhyay	60
	DSE - A (TH & PR)	MEDICINAL AND ETHNOBOTANY	Medicinal botany Pharmacognosy Secondary metabolites Pharmacologically active constituents Ethnobotany and folk medicine	Smt. Anima Saha	60
	DSE - B3 (TH & PR)	RESEARCH METHODOLOGY	Basic concepts of research Overview of biological problems Methods to study plant cells/ tissue structure Plant micro-techniques The art of scientific writing and its presentation	Dr. Madhuvanti Chatterjee	60
	DSE - B (TH & PR)	Natural resource management	Natural resources Sustainable utilization Land Water Biological Resources Forests Forests Contemporary practices in resource management National and international efforts in resource management and conservation	Dr Debabrata Mukhopadhyay	60

Debabrata Mukhopadhyay

Head

Department of Botany
Dr. Debabrata Mukhopadhyay
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