

**Teaching Plan for the Session 2025–26**  
**Name of the Teacher: Dr. Kalyan Das**  
**Designation: Associate Professor**  
**Department: Botany, J.B. College (Autonomous)**

Class/Semester	Title & Code of the Paper Allotted (Credit)	Method of Teaching	Teaching Material	Unit	Topic	Period/Hours Required	Details of the Contents	Remarks/Books
Semester-I	BOTMJ-011 / BOTMI-011: Viruses (Credit: 4)	Lecture, Charts, PPT	Viral Models, Diagrams	Unit 2	Viruses	10 Hours	Virus discovery, characteristics, classification (Baltimore), viroids, prions, replication (T-phage, TMV), lytic/lysogenic cycle, economic roles	Dimmock, Flint
Semester-I	BOTMU-011: Plant Propagation (Credit: 4)	Lecture, Charts, Field Demonstration	Cuttings, Seedlings, Grafting materials	Unit IV	Sexual and Asexual Propagation	10 Hours	Fundamentals of sexual and vegetative propagation; artificial propagation methods	Hartmann & Kester
Semester-II	BOTMJ-021 / BOTMI-021: Gymnosperms & Fossils	Lecture, PPT	Plant specimens, Charts	Unit 4 & 5	Gnetum & Fossil Plants	10 Hours	Gnetum (without development); Fossilization, Rhynia, Cooksonia,	Sporne, Stewart

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							Bennettitales	
Semester-II	BOTMU-021: Plant Propagation (Credit: 4)	Lecture, Charts, Field Demonstration	Cuttings, Seedlings, Grafting materials	Unit IV	Sexual and Asexual Propagation	10 Hours	Fundamentals of sexual and vegetative propagation; artificial propagation methods	Hartmann & Kester
Semester-III	BOTMJ-031 / BOTMI-031: Fungi (Credit: 4)	Lecture, Microscopy	Fungal slides, Models	Unit 4 & 5	Basidiomycota & Allied Fungi	10 Hours	Rust and smut fungi, Agaricus, slime molds, Fairy rings, Mushroom culture	Alexopoulos, Webster
Semester-III	BOTMJ-032: Cell Biology (Credit: 4)	Lecture, PPT, Discussion	Cell models, Charts	Unit 4	Cytoskeleton & Organelles	12 Hours	Microtubules, Chloroplast, Mitochondria, ER, Golgi, Lysosomes	Alberts, Powar
Semester-III	BOTMJ-033: Plant Anatomy (Credit: 4)	Lecture, Practical	Histological slides	Unit 5	Vascular Cambium and Wood	10 Hours	Cambium activity, Wood types, Rays, Periderm, Dendrochronology	Esau, Fahn
Semester-III	BOTMU-031: Plant Propagation (Credit: 4)	Lecture, Charts, Field Demonstration	Cuttings, Seedlings, Grafting materials	Unit IV	Sexual and Asexual Propagation	10 Hours	Fundamentals of sexual and vegetative propagation; artificial propagation	Hartmann & Kester

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							methods	
Semester-IV	BOTMJ-042: Genetics (Credit: 4)	Lecture, Chalk & Talk	Genetic Charts	Unit 1 & 4	Mendelian Genetics & Chromosome Variation	12 Hours	Inheritance, dominance, alleles, epistasis, deletion, inversion, aneuploidy	Gardner, Pierce
Semester-IV	BOTMJ-043: Molecular Biology (Credit: 4)	Lecture, PPT	Diagrams, DNA Models	Unit 2	Genetic Material Structure	10 Hours	DNA history, types, nucleosomes, chromatin structure, euchromatin, heterochromatin	Watson, Lewin
Semester-IV	BOTMJ-044: Quantitative Genetics (Credit: 4)	Lecture, PPT	Data Charts	Unit 3	Polygenic Inheritance	8 Hours	Kernel colour, human skin, mono vs polygenic traits	Strickberger
Semester-IV	BOTMI-041: Genetics (Credit: 4)	Lecture, PPT	Genetic Charts	Unit 1	Polygenic & Extrachromosomal Inheritance	8 Hours	Epistasis, lethal alleles, chloroplast & mitochondrial inheritance	P.K. Gupta
Semester-V	BOTMJ-051: Plant Taxonomy (Credit: 4)	Lecture, Field Visit	ICN Booklet, Field Notes	Unit 3	Botanical Nomenclature	6 Hours	ICN principles, author citation, typification, hybrids, valid publication	Radford, Lawrence
Semester-V	BOTMJ-052: Reproductive	Lecture, Diagrams	Reproductive Slides	Unit 5	Pollination & Fertilization	6 Hours	Pollination types, adaptations,	Bhojwani, Maheshwari

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	Biology (Credit: 4)						stigma/style, pollen tube, double fertilization	
Semester-V	BOTMJ-054: Biostatistics (Credit: 4)	Lecture, Practice	Data Sheets, Calculators	Unit 3 & 4	Statistics & Correlation	14 Hours	Mean, median, SD, CV, regression, correlation types	Sokal & Rohlf, Zar
Semester-V	BOTMI-051: Taxonomy (Credit: 4)	Lecture, Charts	Classification Charts	Unit 7 & 8	Hierarchy & Nomenclature	7 Hours	Ranks, binomial system, typification, publication rules	Simpson, Singh
Semester I	BOTSEC-011 Organic Farming (Credit: 4)	Lecture, Field Visit	Compost samples, Posters	Unit V	Organic Farming	14 Hours	Green manures, organic fertilizers, composting, vermicomposting, applications	Palaniappan, Yadav
Semester II	BOTSEC-021: Organic Farming (Credit: 4)	Lecture, Field Visit	Compost samples, Posters	Unit V	Organic Farming	14 Hours	Green manures, organic fertilizers, composting, vermicomposting, applications	Palaniappan, Yadav

**Note:** Periods/hours are estimated and may be modified according to the institutional academic schedule and student needs.