Teaching Plan (2025-26)

Department of Botany
Dr. Runjun G Rajkumari
Associate Professor
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
Sem I (ODD)	Phycology and Microbiology BOTMJ-011 (Cr:04)	Lecture, PPT, Discussion	Textbook, Diagrams, Model	3	Bacteria	10	Discovery, general character, cell structure, nutritional types, reproduction, economic importance	R.P. Singh
Sem I (ODD)	Phycology and Microbiology BOTMI-011 (Cr:04)	Lecture, PPT, Discussion	Textbook, Diagrams, Model	3	Bacteria	10	Discovery, general character, cell structure, nutritional types, reproduction, economic importance	R.P. Singh
Sem I (ODD)	Biofertilizers and Organic Farming BOTSEC-011	Lecture, PPT, Discussion	Textbook, Diagrams, Model	5	Organic Farming	5	Bio compost making methods, types and methods of	Vayas et al

							vermicompostin g, field application	
Sem III (ODD)	Mycology and Phytopatholog y BOTMJ-031 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	6	Symbiotic Association	8	Lichen – occurrence, general character, thallus organization, reproduction, Types of Mycorrhiza	B.R. Vashishta, A.K. Sinha & Adarsh Kumar -Botany for Degree Students
Sem III (ODD)	Biomolecules and Cell Biology BOTMJ-032 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	3	Enzymes	10	Structure of enzyme, classification of enzyme, features of active site, mechanism of action	Power
Sem III (ODD)	Morphology and Anatomy of Angiosperms BOTMJ-033 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	4	Structure and Development of Plant Body	10	Structure of dicot and monocot stem, origin, development, diversity of size and shape of leaves, organization of root apex	Esau
Sem III (ODD)	Mycology and Phytopatholog y BOTMI-031 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	6	Lichen	8	Lichen – occurrence, general character, thallus organization, reproduction,	B.R. Vashishta, A.K. Sinha & Adarsh Kumar -Botany for Degree Students

							Types of Mycorrhiza	
Sem V (ODD)	Plant Systematics BOTMJ-051	Lecture, PPT, Discussion	Textbook, Diagrams, Model	5	Biometrics, Numerical Taxonomy and Cladistics	8	Characters, variations, OUTs, Cluster analysis, Phenograms, cladograms (definitions and differences)	Maheshwari, Bhojwani
Sem V (ODD)	Plant Physiology BOTMJ-053	Lecture, PPT, Discussion	Textbook, Diagrams, Model	1 & 6	Plant Water Relation & Physiology of Flowering	9 & 8	Water potential and its components, water absorption by roots, aquaporins, symplast, apoplast, transmembrane pathway, ascent of sap, transpiration. Photoperiodism, flowering stimulus, florigen concept, vernalization, seed dormancy	V.K. Jain
Sem V (ODD)	Plant Ecology and Taxonomy BOTMI-051	Lecture, PPT, Discussion	Textbook, Diagrams, Model	2	Plant Communities	6	Characters, ecotone and edge effect, succession, processes and types	P.D. Sharma, Odum

Sem II (EVEN)	Archegoniate BOTMJ-021 (Cr:04)	Lecture, PPT, Discussion	Textbook, Diagrams, Model	2	Bryophytes	9	General characters, adaptations to land habit, classification, range of thallus organization, ecological and economic importance of bryophytes	B.R. Vashishta, R. Sharma
Sem II (EVEN)	Archegoniate BOTMI-021 (Cr:04)	Lecture, PPT, Discussion	Textbook, Diagrams, Model	2	Bryophytes	9	General characters, adaptations to land habit, classification, range of thallus organization, ecological and economic importance of bryophytes	B.R. Vashishta
Sem IV (EVEN)	Basics of Genetics BOTMJ-042 (Cr:04)	Lecture, PPT, Discussion	Textbook, Diagrams, Model	2	Extrachromosomal Inheritance	8	Chloroplast mutation, variegation of 4 o'clock plant, maternal effects, infective heredity	Cell Biology, Genetics, Molecular Biology, Evolution and Ecology; P.S. Verma & V.K. Agarwal
Sem IV (EVEN)	Molecular Biology BOTMJ-043	Lecture, PPT, Discussio	Textbook, Diagrams	4, 5, 6	Central Dogma, Transcription, RNA Processing	3, 8, 8	Key experiments, genetic code; transcription in	Verma and Agarwal

	(Cr:04)	n	, Model				pro and eukaryotes, regulations, heat shock proteins, gene silencing; introns, exons, RNA processing, editing, ribozymes	
Sem IV (EVEN)	Plant Breeding BOTMJ-044 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	5	Crop Improvement and Breeding	9	Role of mutation, polyploidy, distant hybridization and biotechnology in plant breeding	B.D. Singh
Sem IV (EVEN)	Basics of Genetics BOTMI-042 (Cr:04)	Lecture, PPT, Discussio n	Textbook , Diagrams , Model	2	Extrachromosoma l Inheritance	8	Chloroplast mutation, variegation of 4 o'clock plant, maternal effects, infective heredity	Cell Biology, Genetics, Molecular Biology, Evolution and Ecology; P.S. Verma & V.K. Agarwal