



JSS MAHAVIDYAPEETHA
J S S COLLEGE FOR WOMEN (AUTONOMOUS)
(An Autonomous of University of Mysore: Reaccredited by NAAC at 'A' Grade with CGPA: 3.07)

Department of Botany

Course Outcomes (REVISED NEP)

I Semester			
Course type	Course code	Course title	Course outcomes
DSC	HMA 250	Diversity of Microbes, Algae, Fungi & Phytopathology	CO 1: Explain the diversity, classification, general characteristics, and economic importance of Mollicutes, Viruses, Bacteria, Cyanobacteria, Algae, Fungi, and Lichens. CO 2: Describe and compare the structure, life cycles, and reproductive mechanisms of the microorganisms and lower plant groups in the course. CO 3: Identify, analyze, and recommend appropriate management practices for common plant diseases based on their symptoms, causal organisms, and modes of transmission. CO 4: Different habitats of microbes, density and the role of microbes in their habitats.
II Semester			
DSC	HMB 250	Bryophytes, Pteridophytes, Gymnosperms, Palaeobotany & Anatomy of Angiosperms	CO 1: Classify and explain the salient features, classification and economic importance of Bryophytes, Pteridophytes and Gymnosperms. CO 2: Describe and compare the morphology, anatomy and reproductive characteristics of Bryophytes, Pteridophytes, Gymnosperms and fossil plants.

			CO 3: Explain the geological time scale, the process of fossilization and identify different types of fossils. CO 4: Identify, classify and explain different plant tissues and relate their structure to their functions and differentiate the anatomical structures of roots, stems and leaves of dicotyledonous and monocotyledonous plants.
III Semester			
DSC	HMC 250	Reproductive Biology, Plant Ecology, Biodiversity & Conservation	CO 1: Apply the principles of angiosperm reproduction to explain gametophyte development, fertilization, embryogenesis and seed formation. CO 2: Analyze the structure and functioning of ecosystems by interpreting interactions between biotic and abiotic components. CO 3: Evaluate ecological processes, succession, biogeochemical cycles, pollution and plant adaptations to assess ecosystem sustainability. CO 4: Develop appropriate strategies for biodiversity conservation by evaluating threats, conservation approaches, environmental legislation and the roles of national and international organizations.
DSE	HMC 254	Mushroom culture technology & Biofertilizers	CO 1: Explain the principles of mushroom cultivation by identifying edible and poisonous mushrooms, cultivation methods, and infrastructure requirements for commercial production. CO 2: Apply appropriate techniques for spawn production, substrate preparation, pest and disease management and post-harvest handling to achieve safe and quality mushroom production.

			CO 3: Evaluate the role, production methods and agricultural applications of Biofertilizers and beneficial microorganisms for improving soil fertility and sustainable crop productivity. CO 4: Develop sustainable crop production strategies by integrating mycorrhizal associations, Biofertilizers and organic farming practices to enhance crop growth, yield and environmental sustainability.
IV Semester			
DSC	HMD 250	Plant Physiology & Metabolism, Cell Biology & Molecular Biology	CO 1: Apply the principles of plant water relations, mineral nutrition, phytohormones and Photoperiodism to explain plant growth and physiological responses. CO 2: Analyze the mechanism of photosynthesis, respiration, nitrogen metabolism and biomolecule metabolism in plants. CO 3: Analyze the organization and functions of cells, organelles, chromosomes and polyploidy in relation to cellular processes and inheritance. CO 4: Evaluate the structure and function of nucleic acids, DNA replication, gene expression, protein synthesis and cell division to interpret molecular and cellular processes.
DSE	HMD 254	Medicinal Plants & Herbal Technology	CO 1: Analyze the history, scope, classification and significance of medicinal plants in traditional and modern health care systems. CO 2: Apply the principles of pharmacognosy to identify medicinal plants and explain the applications of important herbal drugs.

			CO 3: Evaluate the active phytochemical constituents of medicinal plants and correlate their therapeutic properties with healthcare applications. CO 4: Demonstrate the use of analytical and quality evaluation techniques for the screening, standardization and authentication of herbal drugs.
DC	HMD 256P	Nursery, Gardening & Landscaping	CO 1: Apply nursery management practices and propagation media techniques for the successful production of healthy planting materials. CO 2: Demonstrate plant propagation methods and bonsai training techniques using appropriate horticultural practices. CO 3: Analyze horticultural plant characteristics and select suitable species for different garden types and environmental conditions. CO 4: Design sustainable landscape plants by integrating garden design principles, CAD tools and eco – friendly landscaping practices.
V Semester			
DSC	HME250	Morphology of angiosperms, Taxonomy, Economic Botany and Ethnobotany	CO 1: Analyze morphological diversity and diagnostic characteristics of angiosperms and apply taxonomic principles to identify and interpret plant diversity. CO 2: Apply botanical nomenclature, identification methods and classification systems to analyze and establish taxonomic relationships among angiosperms using scientific evidence.

			CO 3: Conduct systematic investigations using herbarium techniques, taxonomic keys, digital resources and appropriate scientific tools to identify, classify and document angiosperms. CO 4: Evaluate the economic, medicinal and ethnobotanical importance and promote ethical, sustainable utilization, biodiversity conservation and societal well-being.
DSC	HME252	Plant Breeding and Phytogeography	CO 1: Explain the principles, objectives, methods, genetic resources and acclimatization involved in plant breeding for crop improvement. CO 2: Apply the principles of hybridization, selection, heterosis, mutation breeding, polyploidy and Biotechnology in developing improved crop varieties CO 3: Analyze and evaluate the achievements of plant breeding, crop improvement programmes and the contributions of major plant breeding institutes in India. CO 4: Analyze the principles of phytogeography, centres of origin, patterns of plant distribution and the vegetation types of India and Karnataka and interpret their significance in plant conservation and biodiversity management
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			CO 4: Design sustainable landscape plants by integrating garden design principles, CAD tools and eco – friendly landscaping practices.
VI Semester			
DSC	HMF 250	Genetics, Genetic Engineering, Plant Biotechnology and Evolution	CO 1: Analyze the principles of mendelian genetics and Non-mendelian inheritance and patterns of inheritance to solve genetic problems and predict outcomes in organisms. CO 2: Apply the principles and techniques of genetic engineering and evaluate their applications, benefits, limitations and biosafety and ethical implications in agriculture and biotechnology. CO 3: Demonstrate and evaluate plant tissue culture techniques and molecular techniques, analyze experimental outcomes and apply appropriate biotechnological approaches for crop improvement and sustainable agricultural practices. CO 4: Analyze and evaluate the theories, evidences, mechanism of evolution and speciation using scientific patterns of biological diversity
DSC	HMF 252	Phytochemistry and Herbal Technology	CO 1: Explain the principles of photochemistry, primary and secondary metabolites, medicinal plants and their standardization. CO 2: Apply appropriate extraction, isolation and purification methods to obtain phytochemicals from plant materials. CO 3: Analyze phytochemicals using appropriate chromatographic, spectroscopic and analytical techniques for qualitative and quantative evaluation. CO 4: Evaluate phytochemical findings and herbal products with

			respect to medicinal applications, quality, ethical practice and sustainable utilization of plant resources
DC	HMF 256P	Nursery, Gardening & Landscaping	CO 1: Apply nursery management practices and propagation media techniques for the successful production of healthy planting materials. CO 2: Demonstrate plant propagation methods and bonsai training techniques using appropriate horticultural practices. CO 3: Analyze horticultural plant characteristics and select suitable species for different garden types and environmental conditions. CO 4: Design sustainable landscape plants by integrating garden design principles, CAD tools and eco – friendly landscaping practices.