Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, CHHATRAPATI SAMBHAJINAGAR.

DEPARTMENT OF BOTANY

M.Sc. Botany Program Outcome Matrix

Required Courses and Course Outcomes	M.Sc. Botany Course Program Outcomes Semester: II											
	Foundational Knowledge	Research and Analytical Skills	Problem-Solving and Critical Thinking	Practical and Technical Proficiency	Communication Skills	Ethical and Social Responsibility	Teamwork and Collaboration	Entrepreneurship and Innovation	Lifelong Learning	Global and Indian Perspectives	Application of Botany	Career Readiness
Semester: II												
SAD265502T Cytology and Genetics												
CO1: Mastery of Chromatin and Chromosome Organization	✓				✓	✓	✓		✓			
CO2: Understanding Chromosomal Alterations and Their Implications	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO3: Exploration of Mutation Mechanisms and Applications	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
SAD265512T Plant Development and Reproduction												
CO1: Understanding Plant Development Mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2: Mastery of Vascular Tissues and Organ Growth	✓	✓	✓	✓	✓	✓			✓		✓	✓
CO3: Proficiency in Plant Reproduction Processes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAD265522T Biology and Diversity in Fungi and Microbes												
CO1: Comprehensive Understanding of Fungal Biology and Economic Importance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: In-depth Knowledge of Plant Pathogenic Fungi and Bacteria	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Proficiency in Phytoplasmas and Viruses	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAD265502P Practical - Cytology and Genetics												
CO1: Mastery in Inducing and Analyzing Mutations	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO2: Expertise in Chromosomal Analysis and Karyotype Evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Proficiency in Chromosomal Behavior Studies and Mutation Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAD265512P Practical - Plant Development and Reproduction												
CO1: Proficiency in Plant Tissue and Anatomy Analysis	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓
CO2: Skill in Reproductive Structures and Pollen Analysis	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓

CO3: Competence in Ovule, Embryo Sac, and Field Studies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAD265522P Practical - Biology and Diversity in Fungi and Microbes												
CO1: Mastery of Laboratory Techniques and Instrumentation	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO2: Expertise in Microbial Morphology, Taxonomy, and Growth	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Competence in Diagnosing Plant Diseases Caused by Microbes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAD265532P Practical - Botanical Techniques												
CO1: Proficiency in Microscopy and Biological Sample Preparation	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
CO2: Expertise in Botanical Staining, Sectioning, and Plant Preservation	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO3: Competence in Laboratory Techniques and Biostatistics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD2655542T Crop Genetics and Plant Breeding – II												
CO1: Mastery of Heterosis Breeding and Mutation Breeding Techniques	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: Expertise in Resistance Breeding for Disease, Insect, and Drought Resistance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Proficiency in Distant Hybridization and Seed Production Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD2655542P Practical - Crop Genetics and Plant Breeding – II												
CO1: Application of Polyploidy and Mutagenesis Techniques	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: Analysis and Interpretation of Seed and Leaf Proteins	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Designing Field Experiments and Data Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD265552T Mycology and Plant Pathology – II												
CO1: Understanding Fungal Diversity and Applications	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2: Application of Fungi in Biofertilizers and Biopesticides	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO3: Fungal Biotechnology and Mushroom Cultivation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD265552P Practical - Mycology and Plant Pathology – II												
CO1: Practical Skills in Fungal Diversity and Pathology	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓
CO2: Expertise in Industrial and Biotechnological Applications	✓	✓	✓	✓	✓		✓		✓	✓	✓	

CO3: Proficiency in Laboratory Techniques and Biopesticides	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
SBD265562T Taxonomy of Angiosperms – II												
CO1: Understanding of Species Concepts and Speciation Mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: Proficiency in Botanical Nomenclature and Taxonomic Methods	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Practical Skills in Taxonomic Research and Herbarium Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD265562P Practical - Taxonomy of Angiosperms – II												
CO1: Proficiency in Species Description and Intraspecific Variation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: Expertise in Morphological and Evolutionary Studies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Practical Skills in Nomenclature, Identification, and Fieldwork	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD265572T Advanced Plant Physiology and Biochemistry – II												
CO1: Advanced Understanding of Photosynthesis and Plant Productivity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2: Proficiency in Biomass Utilization and Waste Management	✓		✓		✓	✓	✓	✓		✓		✓
CO3: Expertise in Green Crop Fractionation and Nutritional Applications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBD265572P Practical - Advanced Plant Physiology and Biochemistry – II												
CO1: Proficiency in Nutritional and Biochemical Analysis	✓	✓	✓				✓					
CO2: Competence in Growth Analysis and Green Crop Fractionation	✓	✓	✓	✓	✓		✓		✓	✓	✓	
CO3: Expertise in Leaf Protein Concentrate (LPC) Preparation and Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SMD265612P OJT/FP/ Internship	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓