



**PROGRAMME STRUCTURE**  
**M.Sc. Botany Semester: IV**

Programme Outcome (PO) - For M.Sc. Botany Programme	<p>Students completing M.Sc. Botany course of four semesters will gain thorough knowledge and develop relevant practical skills on different areas of Botany, both the fundamental and traditional aspects as well as the advanced and application oriented aspects such as plant structural and functional diversity and its role in human livelihood, ecological services and human influenced environmental issues, evolution processes resulting the diversified plant groups, their morphological, anatomical, and physiological adaptations to different environmental conditions, plant interactions with microbes and insects, genetic makeup and inheritance of various levels of plants, cell and molecular biology of plants, horticultural crops, physiology, biochemistry, biotechnology, recombinant DNA technology, proteomics and transgenic technology.</p> <p>Students will develop skills of plant explorations and identifications, herbarium preparation and preservation techniques, nursery establishment and management techniques, principles and methods of biodiversity conservation, microscopy and microtomy, reproduction, genetics, genetic structure of populations, microbiology, molecular biology, identification of various pests and diseases of crop plants and their controlling mechanisms, various analytical techniques, acquaintance with the use of bioinformatics tools and databases and application of statistics to biological data, biotechnological tools and techniques used for mass <i>in vitro</i> propagation, genetic transformation of plants, transgenic technology.</p> <p>By performing practical experiments relevant to the theory papers and taking one elective paper of their choice in each semester and a dissertation course in the fourth semester, students will get trained in experimental design and execution, firsthand experience on tools and techniques of research, quantitative and qualitative data analysis and interpretation of data. By presenting seminars in each semester, students will develop science communication and presentation skills.</p>
Programme Specific Outcome (PSO) - For MSc Botany Semester - IV	<p>Having studied the four prescribed papers, by the end of this semester, students will be able to:</p> <ol style="list-style-type: none"><li>1. Recognize and appreciate diversity, classification, ecological and economic significance of various groups of lower plants and higher plants including archibacteria and eubacteria.</li><li>2. Understand how cell interacts with environment, how cell growth and death are regulated.</li><li>3. Understand evolutionary trends among different groups of plants.</li><li>4. Have clear understanding about various tools and techniques to study cells, different cell organelles and their functions.</li><li>5. Become familiar with appropriate statistical methods required for designing a scientific experiments, formulate appropriate hypothesis for a scientific investigation.</li></ol>





**SARDAR PATEL UNIVERSITY**  
**Vallabh Vidyanagar, Gujarat**  
**(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))**  
**Syllabus with effect from the Academic Year 2022-2023**

To Pass	(1) At least 40% marks in each paper at the University Examination and 40% aggregate marks in Internal and External Assessment. (2) At least 33% Marks in each paper in Internal Assessment.
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Course Type	Course Code	Name Of Course	Theory/ Practical	Credit	Exam Duration in hrs	Component of Marks		
						Internal	External	Total
						Total	Total	Total
Core Course	PS04CBOT51	Plant Physiology and Biochemistry	T	4	3	30	70	100
	PS04CBOT52	Plant Biotechnology	T	4	3	30	70	100
	PS04CBOT53	Practicals	P	4	3	30	70	100
	PS04CBOT54	Viva-Voce	=	1	=	=	50	50
Elective Course (Any Two)	PS04EBOT51	IPR and Biosafety	T	4	3	30	70	100
	PS04EBOT52	Biodiversity and Conservation	T	4	3	30	70	100
	PS04EBOT53	Practicals	P	4	3	30	70	100
	PS04EBOT55	Phytoresources (Effect from December, 2024)	T	4	3	30	70	100
		<b>OR</b>						
Core Course	PS04CBOT51	Plant Physiology and Biochemistry	T	4	3	30	70	100
	PS04CBOT52	Plant Biotechnology	T	4	3	30	70	100
	PS04CBOT53	Practicals	P	4	3	30	70	100
	PS04CBOT54	Viva-Voce	=	1	=	=	50	50
Elective Course	PS04EBOT54	Dissertation	=	12	=	90	210	300

