



**PROGRAMME STRUCTURE**  
**Master of Science in Mathematics**  
**MSc (Mathematics) Semester: II**

<p>Programme Outcome (PO) - For MSc Mathematics Programme</p>	<p>Master of Science program provides extended theoretical and practical knowledge of different science subjects. Master of Science programme at Sardar Patel University is designed keeping the overall back ground preparation in mind for the student to either seek a job or to become an entrepreneur. The students, after completion of Bachelor of Science can select the master's programme in the subject they have had at the final year or in a related discipline (depending upon eligibility criteria prescribed by university).</p> <p><b>Programme outcomes: At the end of the program, the students will be able to</b></p> <ol style="list-style-type: none"><li>1. Have a deep understanding of both the theoretical and practical concepts in the respective subject.</li><li>2. Understand laboratory processes and use scientific equipments and work independently.</li><li>3. Develop research temperament as a consequence of their theory and practical learning.</li><li>4. Communicate scientific information in oral and written form.</li><li>5. Understand the issues related to nature and environmental contexts and think rationally for sustainable development.</li><li>6. The students are able to handle unexpected situations by critically analyzing the problem.</li></ol>
<p>Programme Specific Outcome (PSO) - For MSc Mathematics Semester - II</p>	<p>The Postgraduate would be able to</p> <p>PSO 1 understand the basic concepts of algebra, analysis, computational methods, optimization, differential equations and their importance as an abstract phenomenon and also some real- world problems.</p> <p>PSO 2 analyze and solve the well-defined problems. Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving variety of problems.</p> <p>PSO 3 compete the world through their ability of creative and critical thinking which is developed and built through seminars and problem-solving sessions.</p> <p>PSO 4 handle the advanced techniques in algebra, analysis, computational methods, optimization, differential equations to analyze and design algorithms for solving variety of problems.</p>





**SARDAR PATEL UNIVERSITY**  
**Vallabh Vidyanagar, Gujarat**  
**(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))**  
**Syllabus with effect from the Academic Year 2021-2022**

	<p>PSO 5 learn and prepare mathematical algorithms, select and apply appropriate methods, resources and computing tools such as Excel, MATLAB, Python, etc.</p> <p>PSO 6 communicate effectively about their mathematical abilities on the activities, with their peers and society at large.</p> <p>PSO 7 select, interpret and critically evaluate information from a range of sources that include books, scientific reports, journals, etc.</p> <p>PSO 8 apply the knowledge of Mathematics in all the fields of learning including higher research and extensions. Recognize the need to engage in lifelong learning through continuous education, and research leading to higher degrees like Ph. D.</p>
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<b>To Pass</b>	At least 40% Marks in the University Examination in each paper and 40% Marks in the aggregate of University and Internal examination in each course of Theory, Practical & 40% Marks in Viva-voce.
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Course Type	Course Code	Name Of Course	Theory/ Practical	Credit	Exam Duration in hrs	Component of Marks		
						Internal Total	External Total	Total Total
Core Course	PS02CMTH51	Real Analysis - I	T	4	3	30	70	100
	PS02CMTH52	Algebra Rings and Fields	T	4	3	30	70	100
	PS02CMTH53	Differential Geometry	T	4	3	30	70	100
	PS02CMTH54	Functional Analysis-I	T	4	3	30	70	100
	PS02CMTH55	Methods of Partial Differential Equations	T	4	3	30	70	100
	PS02CMTH56	Comprehensive Viva			1	=	50	50
Elective Course	PS02EMTH51	Graph Theory-I	T	4	3	30	70	100
	PS02EMTH52	Mathematical Classical Mechanics	T	4	3	30	70	100
	PS02EMTH53	Number Theory	T	4	3	30	70	100
	PS02EMTH54	Problems and Exercises in Mathematics-I	T	4	3	30	70	100

