



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

**PROGRAMME STRUCTURE**  
**Master of Science in Statistics**  
**MSc (Applied Statistics) Semester: III**

<p>Programme Outcome (PO) - For MSc Applied <b>Statistics</b> 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 Applied <b>Statistics</b> Semester - III</p>	<p>Statistics is the scientific application of mathematical principles to the collection, analysis, and presentation of numerical data. Statisticians contribute to scientific inquiry by applying their mathematical knowledge to the design of surveys and experiments; collection, processing, and analysis of data; and interpretation of the results. As students learn various statistical methods applicable in the areas of biology, economics, engineering, medicine, public health, psychology, marketing, education, sports and so on, they will</p> <ol style="list-style-type: none"><li>1. Acquire a solid foundation in mathematical statistics and learn how it applies to data analysis.</li><li>2. Develop an understanding and gain experience in applying statistical methodology learned in the classroom to real problems in science, corporate and industry.</li><li>3. Be knowledgeable of the most modern techniques in statistical methodology and data science, especially data analysis techniques associated with statistical learning and machine learning.</li><li>4. Get placed in company building software like MINITAB, MATLAB, R, SPSS, etc. and / or start his / her own data analytics form.</li><li>5. Analyze very large data sets in the context of real world problems and interpret results using data analytics.</li></ol>





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To Pass	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	External	Total
						Total	Total	Total
Core Course	PS03CAST51	Knowledge Discovery and Data Mining	T	4	3	30	70	100
		<b>OR</b>						
	PS03CAST56	Planning and Analysis of Industrial Experiment (Effect from June, 2024)	T	4	3	30	70	100
	PS03CAST52	Operations Research - II	T	4	3	30	70	100
	PS03CAST53	Practicals	P	4	3	30	70	100
	PS03CAST54	Practicals	P	4	3	30	70	100
	PS03CAST55	Comprehensive Viva-Voce		1	=	=	50	50
Elective Course (Any Two)	PS03EAST51	Planning and Analysis of Industrial Experiment	T	4	3	30	70	100
		<b>OR</b>						
	PS03EAST54	Pattern Recognition (Effect from June, 2024)	T	4	3	30	70	100
	PS03EAST52	Generalized Linear Models	T	4	3	30	70	100
	PS03EAST53	Survival Analysis	T	4	3	30	70	100

