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

PROGRAMME STRUCTURE
Master of Science in Statistics
MSc (Statistics) Semester: I

Programme Outcome (PO) - For MSc **Statistics** Programme	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). **Programme outcomes: At the end of the program, the students will be able to** 1. Have a deep understanding of both the theoretical and practical concepts in the respective subject. 2. Understand laboratory processes and use scientific equipments and work independently. 3. Develop research temperament as a consequence of their theory and practical learning. 4. Communicate scientific information in oral and written form. 5. Understand the issues related to nature and environmental contexts and think rationally for sustainable development. 6. The students are able to handle unexpected situations by critically analyzing the problem.
Programme Specific Outcome (PSO) - For MSc **Statistics** Semester - I	Statistics is the science of summarizing, analyzing and modeling data, and using computing tools to make predictions and decisions in the face of uncertainty. Statistical ideas are applicable in almost all areas involving quantitative data. The M. Sc. (Statistics) programme has been designed in such a way that besides the core courses, a student can opt for outcome based elective courses such as Introduction to Python programming, Introduction to R programming, Official Statistics and Demography, Survival Analysis, Life Testing and Reliability, Generalized Linear models, Time series Analysis, etc. Also, a student can opt for outcome based specialization in Actuarial Statistics, Biostatistics. The student graduating with the Degree M.Sc. Statistics should be able to: 1. Understand basic theoretical and applied principles of statistics with adequate preparation to pursue a PhD. 2. Appear in various competitive examinations such as NET/SET, ISS, UPSC, etc. 3. Understand basic theoretical and applied principles of statistics needed to enter the job force as an applied statistician, Data Scientist. 4. Apply the most modern techniques in statistical methodology and data science, especially data analysis techniques associated with statistical learning and machine learning. 5. Handle statistical computing, data management, and have proficiency in using statistical software for data analysis.

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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.

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	PS01CSTA51	Probability Theory	T	4	3	30	70	100
	PS01CSTA52	Matrix Algebra	T	4	3	30	70	100
	PS01CSTA53	Distribution Theory	T	4	3	30	70	100
	PS01CSTA54	Theory of Estimation	T	4	3	30	70	100
	PS01CSTA55	Practicals	P	4	3	30	70	100
	PS01CSTA56	Comprehensive Viva-Voce		1		=	50	50
Elective Course	PS01ESTA51	Introduction of Python Programming	T	4	3	30	70	100
	PS01ESTA52	Introduction of R Programming	T	4	3	30	70	100