M. G. Science Institute, Ahmedabad

Autonomous | Affiliated to Gujarat University, Ahmedabad

(Managed by The Ahmedabad Education Society)

Department of Statistics

Bachelor of Science (Hons.) in Statistics

B.Sc. (Hons.) Statistics

4 Year, 8 Semester Full-Time Programme

Choice Based Credit System (CBCS) & Grading System

Outcome-Based Education Pattern

(Effective from Academic Year 2024-25)

Semester: IV	Course Title: Basic Statistical Analysis Using Jamovi	Credit: 2
Course No.: STSEC246		Hours: 3/week

Course Outcomes: On successful completion of the course the learner will be able to

CO	COGNITIVE ABILITIES	COURSE OUTCOMES
CO 1	REMEMBERING	Recall the basic concepts and steps in hypothesis testing, correlation, regression, and chi-square tests.
CO 2	UNDERSTANDING	Explain the process and statistical principles underlying hypothesis testing, correlation, regression analysis, and chi-square tests in Jamovi.
CO 3	APPLYING	Use Jamovi to perform hypothesis testing, calculate correlation coefficients, fit regression models, and conduct chi-square tests on real-world datasets.
CO 4	ANALYSING	Analyze Jamovi outputs to evaluate relationships between variables and determine statistical significance in hypothesis testing and chi-square analysis.
CO 5	EVALUATING	Assess the validity of results from statistical tests conducted in Jamovi.
CO 6	CREATING	Execute complete statistical workflow in Jamovi, integrating hypothesis testing, correlation and regression analysis, and chi-square tests for practical applications.1

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	3	1			1
CO 2	3	2	1	1	1
CO 3	3	3	2	3	2
CO 4	3	3	3	3	2
CO 5	3	2	3	3	3
CO 6	3	3	3	3	3

Unit	Detailed Syllabus	No. of Hours of Teaching
I	Basic Statistical Analysis Using Jamovi Problems related to probability distributions: • Generating random numbers. • Computing pdf and pmf. • Computing cdf • Computing quantiles. • Graphs of pdf, pmf, cdf. Correlation Analysis • Introduction to Correlation, Pearson's Correlation Coefficient, Spearman's Correlation Coefficient, Kendall's Tau Correlation Coefficient • Testing the Significance of the Correlation coefficient Regression Analysis • Fitting Linear Regression • Curve Fitting • Testing the significance of the regression coefficients	15

II	**Practicals Based on Unit I**	30

Suggested References:

1. The jamovi project (2022). jamovi. (Version 2.3) [Computer Software]. Retrieved from https://www.jamovi.org.
2. Navarro DJ and Foxcroft DR (2022). learning statistics with jamovi: a tutorial for psychology students and other beginners. (Version 0.75). DOI: 10.24384/hgc3-7p1