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)

Detailed Syllabus for Each Course B.Sc. (Hons.) Statistics

STSEC356 Basics of R-Programming

Semester: V	Course Title:	Credit: 2
Course No.: STSEC356		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 fundamental concepts of R programming, data types, and basic functions.
CO 2	UNDERSTANDING	Explain methods for data handling, visualization, and statistical operations in R.
CO 3	APPLYING	Apply R programming techniques to perform data analysis, hypothesis testing, and visualization.
CO 4	ANALYSING	Analyse datasets to identify patterns, perform chi-square tests, and correlation analysis using R.
CO 5	EVALUATING	Evaluate statistical results generated through R by interpreting outputs and checking assumptions.
CO 6	CREATING	Design R scripts for performing advanced statistical analysis and data visualization.

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	1	0	0
CO2	2	3	2	1	0
CO3	1	2	3	2	1
CO4	0	1	2	3	2
CO5	0	1	2	3	3
CO6	0	0	1	2	3

Unit	Detailed Syllabus	No. of Hours of Teaching
I	Introduction to R Programming: Data Types in R Importing and handling data in R Working with R Functions Data Visualization using R Summarization of Data Using R Hypothesis Testing Using R Chi-square test of association Chi-square test of Goodness of Fit Correlation and Regression Using R Testing the Significance of the Correlation coefficient	15
II	Practical based on unit 1	30

Suggested References:

https://www.r-project.org