

**SWARNANDHRA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)**

SEETHARAMPURAM, NARSAPUR-534280, WG-DT,AP

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS(Honours)

TEACHING PLAN

Course Code	Course Title	Year / Sem.	Branch	Contact Hr/ week	Academic Year
24BC1L04	STATISTICS USING R LAB	I/I	BCA	3	2025-26

Course Outcomes (COs): At the end of the course, student will be able to

CO No.	Course Outcome	Knowledge Level (K)#
CO1	Understand and use basic R programming constructs such as variables, data types, arithmetic operations, and input/output.	K2
CO2	Apply functions, vectors, matrices, and data frames in R for data manipulation and basic operations	K3
CO3	Analyze and implement object-oriented programming in R using S3, S4, and reference classes.	K4
CO4	Utilize R for statistical analysis, including calculating descriptive statistics and visualizing data using various types of plots (box plots, scatter plots, bar plots).	K4
CO5	Develop R programs to work with probability distributions, perform correlation analysis, and use R for basic statistical modeling.	K4

S.No	Program	Proposed Number of Labs
1	a) Write an R program to print Hello World b) Write a program to demonstrate the basic Arithmetic in R c) Write a program to demonstrate the Variable assignment in R d) Write a program to demonstrate the data types in R	2
2	a) Write a program to demonstrate the creating and naming a vector in R b) Write a program to demonstrate the create a matrix and naming matrix in R. c) Write a program to demonstrate the Add column and Add a Row in Matrix in R d) Write a program to demonstrate the selection of elements in Matrixes in R	1

3	a) Write a program to demonstrate the Performing Arithmetic of Matrices. a) Write a program to demonstrate the Factors in R. b) Implement the Factor in R. c) Write a program to illustrate Ordered Factors in R	1
4	a) Write an R program to take input from the user. b) Write an R program to Check if a Number is Odd or Even c) Write an R program to check if the given number is a Prime Number. d) Write an R program to Find the Factorial of a Number	1
5	a) Write an R program to Find the Factors of a Number b) Write an R program to Find the Fibonacci sequence Using Recursive Function c) Write an R program to make a Simple Calculator d) Write an R program to Find L.C.M of two numbers	1
6	a) Write an R program to create a Vector and to access elements in a vector b) Write an R program to create a Matrix and access rows and columns using functions colnames() and rownames() c) Write an R Program to create a Matrix using cbind() and rbind() functions. d) Write an R Program to create a Matrix from a Vector using the dim() function.	2
7	a) Write an R Program to create a List and modify its components. b) Write an R Program to create a Data Frame. c) Write an R Program to access a Data Frame like a List. d) Write an R Program to access a Data Frame like a Matrix. e) Write an R Program to create a Factor.	2
8	a) Write an R Program to Access and Modify Components of a Factor. b) Write an R Program to create an S3 Class and S3 Objects. c) Write an R Program to write an own generic function in S3 Class. d) Write an R Program to create an S4 Class and S4 Objects. e) Write an R Program to write an own generic function in S4 Class.	1
9	a) Write an R Program to create a reference class and modify its methods. b) Write an R program to create a scatter plot for the data frame columns. c) Write an R program to create a bar plot for the data frame columns.	1
10	a) Write an R program to create a box plot for the data frame columns. b) Write an R program to add the legend to the plot.	1

11	a) Write an R program to change the width and height of the plot layout b) Write an R program to calculate mean, mode, median and standard deviation c) Implement R Script to create a Pie chart, Bar Chart, scatter plot and Histogram.	1
12	a) Implement R Script to perform Normal, Binomial distributions. b) Implement R Script to perform correlation	1

References:

1. R Cookbook Paperback – 2011 by Teetor Paul O Reilly Publications
2. Beginning R: The Statistical Programming Language by Dr. Mark Gardener, Wiley Publications
3. R Programming For Dummies by JorisMeysAndrie de Vries, Wiley Publications
4. Hands-On Programming with R by Grolemond, O Reilly Publications
5. Statistical Programming in R by KG Srinivas G.M. Siddesh, Chetan Shetty & Sowmya B.J. - 2017 edition
6. R Fundamentals and Programming Techniques, Thomas Lumely.
7. R for Everyone Advanced Series Analytics and Graphics, Jared P. Lander-Addison Wesley
8. The Art of R Programming, Norman Matloff, Cengage Learning



P. Venkanna.

Faculty



Head of the Department



Principal