ADD ON COURSE

STATISTICAL TECHNIQUES USING OPEN SOURCE SOFTWARE

Objectives

1. Introduction – introduce the practice of data science and the R programming language.
2. Working with Data – learn how to import, transform, clean, and export data.
3. Descriptive Statistics – learn how to create and interpret Univariate and bivariate statistics.
4. Data Visualization – learn how to create Univariate, bivariate, and multivariate data visualizations.
5. R in Practice – learn about R in production, reproducible research, and industry best practices.

Course Outcomes

1. List motivation for learning a programming language.
2. Access online resources for R and import new function packages into the R workspace.
3. Import, review, manipulate and summarize data-sets in R.
4. Explore data-sets to create testable hypotheses and identify appropriate statistical tests.
5. Perform appropriate statistical tests using R.
6. Create and edit visualizations with R.

MODEL BLUEPRINT		
Subject Code		19UPSTA1A01
Title of the Paper		Statistical Techniques Using Open Source Software
Unit Number	Number of Hours	Total Marks
1	6	20
2	6	20
3	6	20
4	6	20
5	6	20
Total	30	20
Maximum Marks for the Paper		100

By
Department of Statistics
Periyar University
Salem – 636 011

Add On Course	Statistical Techniques Using Open Source Software	Course Code: 19UPSTA1A01

Unit I

Overview of R - Basic fundamentals - Installation and use of software, data editing, Importing data into R – Use of R as a calculator - Components of R console-Use of Packages

Unit II

R Data types - Data management with vectors indexing, lists, factors, strings, Data frame - Arithmetic, Relational and Logical operators-Matrix operations.

Unit III

Graphics and plots - creating simple graphic application for Statistical problems.

Unit IV

Statistical functions for Central tendency, Variation, Skewness and Kurtosis-Correlation and Regression.

Unit V

Statistical Tests - t, F, chi square - programming and illustration with examples.

Books for study and reference:

1. Purohit, S. G, Gore, S. D and Deshmukh, S. R (2009) Statistics Using R, Narosa publishing house New Delhi.
2. Pillai R. S. N and Bagavathi (2008) Statistics (Theory and Practice), S. Chand, New Delhi.

Dr. S. RITA
Associate Professor and Head (i/c)
Department of Statistics
Periyar University,
Salem-636 011.