



R Programming

COURSE CONTENT

1. R MAJOR CONCEPTS

R : Basic Syntax
R : Variables
R : Operators
R : Vectors
R : Function
R : Matrices and Arrays
R : Charts and Graphs Pie Charts
R : Charts and Graphs Boxplots
R : Charts and Graphs Line Graphs
R : Mean, Median and Mode
R : Multiple Regression
R : Normal Distribution
R : Poisson Distribution
R : Time Series Analysis
R : Decision Tree
R : Data Frames
R : Listing and Deleting Objects in Memory
R : Saving your work

R : Data Types
R : Scalars
R : Loops
R : Factors
R : Strings
R : Lists
R : Charts and Graphs Bar Charts
R : Charts and Graphs Histogram
R : Charts and Graphs Scatter Plots
R : Linear Regression
R : Logistic Regression
R : Binomial Distribution
R : Analysis of Covariance
R : Nonlinear Least Square
R : Survival Analysis
R : Working with Data Objects
R : Editing data objects
R : Importing Files

2. R PROGRAMMING

2.1 Basic
2.2 Array
2.3 Data Frame
2.4 Matrix
2.5 Vectors
2.6 Lists
2.7 Factors

3. INTRODUCTION TO R

3.1 Introduction
3.2 R as a Calculator and Basic R Command
3.3 R Preliminaries
3.4 Method of Data Input
3.4 Data Accessing OR Indexing
3.5 Useful Built-In Functions
3.6 Graphics with R
3.7 Exercises and Solution

4. DESCRIPTIVE STATISTICS

4.1 Introduction
4.2 Diagrammatic Representation of Data
4.3 Graphical Representation of Data
4.4 Measures of Central Tendency

- 4.5 Measures of Dispersion
- 4.6 Measures of Skewness and Kurtosis
- 4.7 Selection of Representative Samples-SRS
- 4.8 Exercises and Solution

5. PROBABILITY AND PROBABILITY DISTRIBUTION

- 5.1 Introduction
- 5.2 Probability: Definition and Property
- 5.3 Probability Distribution: Discrete and Continuous Probability Distribution
- 5.4 Exercises and Solution

6. CORRELATION AND REGRESSION ANALYSIS

- 6.1 Introduction
- 6.2 Correlation
- 6.3 Correlation Coefficient
- 6.4 Linear Regression Model
- 6.5 Exercises and Solution

7. STATISTICAL INFERENCE

- 7.1 Introduction
- 7.2 Sampling Distribution of sample mean
- 7.3 Estimation of Parameters
- 7.4 Hypothesis Testing
- 7.5 Goodness of Fit Test
- 7.6 Exercises and Solution