

## Syllabus of R Programming

### Introduction to R

- What is R?
- Why R?
- Installing R
- R environment
- How to get help in R
- R console and Editor

### Understanding R data structure

- Variables in R
- Scalars
- Vectors
- Matrices
- List
- Data frames
- Using c, Cbind, Rbind, attach and detach functions in R
- Factors

### Importing data

- Reading Tabular Data files
- Reading CSV files
- Importing data from excel
- Importing data from SAS
- Accessing database
- Saving in R data
- Loading R data objects
- Writing to files

## Manipulating Data

- Selecting rows/observations
- Selecting columns/fields
- Merging data
- Relabelling the column names
- Converting variable types
- Data sorting
- Data aggregation

## Using functions in R

- Commonly used Mathematical Functions
- Commonly used Summary Functions
- Commonly used String Functions
- User-defined functions
- local and global variable

## R Programming

- While loop
- If loop
- For loop
- Arithmetic operations

## Charts and Plots

- Box plot
- Histogram
- Pareto charts
- Pie graph
- Line chart
- Scatterplot
- Developing graphs