

## SEC 2:

**A: R programming ( Th 13 classes + Practical: 26 classes)**

**Composite Paper, Full Marks:100 (Th: 60+ Pr: 40), Total Credit: 2 (1+1) No. of classes per week: 3(=1+2)**

**Course Objective:** *The basic objective of this course is to get students acquainted with the basic methodologies regarding data analysis.*

### **Theory Part (HMTSE4022T):**

1. How to run R( Interactive mode and Batch mode) [2]
2. Introduction to functions: variable space, default arguments.[5]
3. Preview of some important R data structures ( Vectors, Character Strings, Matrices, Lists, Data Frames , Classes) [9]
4. Vectors: Scalars, Vectors, Arrays and Matrices ; Matrices and Arrays: Creating Matrices, General Matrix Operations.[10]

### **Books Recommended:**

1. The Art of R programming: Norman Matloff
2. Introduction to R programming: Peter R Dalgard.

### **Practical Part (HMTSE4022P):**

1. Basic mathematical operations in R: ---> R as a calculator. [2]
2. Modes of data entry and storage. [3]
3. Graphical representations of data ----frequency and non-frequency. [4]
4. Descriptive statistics. [3]
5. Writing functions in R, loops, conditional statements---> Application to sampling distribution and simulation problems, numerical methods. [6]
6. Linear Models (Regression, Annova) [6]
7. Statistical inference. [2]

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