Course code	Course Title	L	T	P	C
BCSE331P	Exploratory Data Analysis Lab	0	0	2	1
Pre-requisite	NIL	Syllabus version			
		1.0			

Course Objectives

1. Emphasize the importance of programming in EDA.
2. Familiarize the student with R programming for various tasks.
3. Explore data structures and file processing facilities in R language.

Course Outcomes

At the end of the course, the student will be able to

1. Engrave simple R programs.
2. Debug and execute R programs using R studio.
3. Implement several algorithms in R language.

	Indicative Experiments	
1.	Data transformation and pre-processing. Write R programs to read data from keyboard and transform it to various ranges like [-3,+3], [-1,+1], [0,1] etc.	**4 hours**
2.	Write R programs to read data from keyboard or text files and compute summary measures like arithmetic mean, median, mode, variance and standard deviation. Also read a set of X,Y values and find covariance and correlation, use statistical techniques to identify outlier data	**6 hours**
3.	Estimation of missing data, global methods, class based methods, multiple imputation methods etc	**6 hours**
4	Exploratory Data Analysis for Structured Data	**4 hours**
4.	Write R programs to implement the k-means clustering algorithm by reading the data and user-specified value of k. Display the characteristics of the clusters found by the algorithm.	**6 hours**
5.	Write R programs for nearest neighbour algorithms for classification	**4 hours**
	Total Laboratory Hours	**30 hours**

Mode of assessment: Continuous assessment / FAT / Oral examination and others

Recommended by Board of Studies	12-05-2022		
Approved by Academic Council	No. 66	Date	16-06-2022