Data Analytics Lab (KIT-651)		
Course Outcome (CO)		**Bloom's Knowledge Level (KL)**
At the end of course , the student will be able to		
CO 1	Implement numerical and statistical analysis on various data sources	K_3
CO 2	Apply data preprocessing and dimensionality reduction methods on raw data	K_3
CO 3	Implement linear regression technique on numeric data for prediction	K_3
CO 4	Execute clustering and association rule mining algorithms on different datasets	K_3
CO 5	Implement and evaluate the performance of KNN algorithm on different datasets	K_3, K_4

DETAILED SYLLABUS

1. To get the input from user and perform numerical operations (MAX, MIN, AVG, SUM, SQRT, ROUND) using in R.
2. To perform data import/export (.CSV, .XLS, .TXT) operations using data frames in R.
3. To get the input matrix from user and perform Matrix addition, subtraction, multiplication, inverse transpose and division operations using vector concept in R.
4. To perform statistical operations (Mean, Median, Mode and Standard deviation) using R.
5. To perform data pre-processing operations i) Handling Missing data ii) Min-Max normalization
6. To perform dimensionality reduction operation using PCA for Houses Data Set
7. To perform Simple Linear Regression with R.
8. To perform K-Means clustering operation and visualize for iris data set
9. Write R script to diagnose any disease using KNN classification and plot the results.
10. To perform market basket analysis using Association Rules (Apriori).

Note: The Instructor may add/delete/modify/tune experiments, wherever he/she feels in a justified manner
It is also suggested that open source tools should be preferred to conduct the lab (R , Python etc.)