17HS058 COMPUTER PROGRAMMING AND DATA ANALYTICS

Course Description and Objectives:

This course enables the students to be exposed to data and to learn descriptive statistics and different ways of data analysis and thereby familiarize with search strategies, data streams, data mining cum clustering and estimation of various regressions with visualization.

Course Outcomes:
Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes
1	Enables to apply the statistical analysis methods
2	Compare and contrast various search strategies and clustering.
3	Enables to analyse various regression models.
4	Gain knowledge on binary classification, logistic regression algorithms and to apply in real time problems.
5	Enables to use visualization techniques.

Skills:

1. Work with bigdata tools and its analysis techniques.
2. Analyze data by utilizing clustering and classification algorithms.
3. Perform analytics on various binary classification and regression algorithms.

Unit-1

Data analysis using spread sheets: Data analytics pack in Excel, Descriptive statistics, tests of hypothesis, ANOVA, Correlation and regression.

Unit-2

Using Excel-Random number generation from different distributions, Binomial, Poisson, Uniform, Normal and from discrete distributions with given mean and variance.

Unit-3

Forecasting using Excel- Moving Averages and Exponential smoothing, Use of functions, Linest, Logest Forecast, Growth, Trend for trend analysis

Unit-4

Data handling using SPSS: opening Excel and other files in is SPSS, Variables, labels and values. Merging files, selecting cases recoding, and sorting of data. Analysis tools, descriptive statistics, cross tabs.

Unit-5

Formulae and procedure for multiple comparisons using Tukey's test, Duncan's Multiple range test, Dunnet's test and Scheffe's test with interpretation.

Reference books:

1. Sarma, K.V.S (2010): Statistics Made Simple, Do it Yourself on PC, Prenice Hall of India.
2. Foster J.J (2001), Data Analysis using SPSS for Windows 8.0-10.0, A Beginner's Guide
3. Steel R. GD and J.H. Torrie (1980), Principles and Procedures of Statistics, A Biometrical Approach, McGraw-Hill International Edition.