1. To draw histogram, bar diagram, frequency polygon, pie chart, ogives and line diagram in Excel.
2. Sorting data in ascending and descending order and hence find the median.
3. To compute mean, median and mode in Excel
4. To compute combined mean and combined variance in Excel
5. To compute variance and standard deviation in Excel.
6. To compute partition values, skewness and kurtosis in Excel.
7. To compute correlation and lines of regression in Excel.
8. To find the Predicted values using regression models in Excel.
9. Fitting of polynomial and exponential curve in Excel.
10. Finding equation of best fit using Excel

SUGGESTED READINGS:

1. Moore, D.S., McCabe,G.P., &Craig,B.A.(2014). Introduction to the Practice of Statistics. W.H.Freeman.
2. Levine, D.M., Berenson, M.L., & Krehbiel, T.C. (2008). Statistics for Managers Using Microsoft Excel (5thed.). Prentice Hall.
3. Bhattacharjee D.(2010): Practical Statistics Using Microsoft Excel. Asian Books, NewDelhi.

SKILL ENHANCEMENT COURSE IN STATISTICS: SEC-151T
(Statistical Data Analysis using R)
(Credit: 03)
Contact Hours: 60 hours
Full Marks = 70 [End Semester Exam (50) +Internal (14 + 6(Attendance))]
Pass Marks = 28 [End Semester Exam (20) + Internal (8)]

Learning Objectives:

- To introduce R programming language and its key features to students.
- To introduce the basic R syntax and data types.
- To provide guidance on importing data into R from various file formats.

- To acquaint with basic of data analysis and handling of missing observations.

Learning Outcomes:

- Apply the fundamentals of R and its features for data analysis and interpretation.
- Proficiently apply basic R syntax and effectively work with different data types
- Explore data visualization in R and its importance in data analysis
- Interpret the result of bivariate data analysis techniques including cross tabulation and scatter plot.
- Interpreting the result of a fitted linear regression model.

UNIT I

Introduction to R and its features, Installing R and R-Studio, Basic R syntax and data types, Importing data into R from various file formats (e.g., CSV, Excel, text files), Problems faced in case of missing data and data cleaning techniques.

UNIT II

Introduction to data visualization in R, Basic plotting functions in R, Creating and customizing various types of plots, including: Histograms, Pie charts, Frequency polygons, Frequency curves, Bar charts, Box plots. Adding labels, titles, and legends to plots, saving and exporting plots.

UNIT III

Measures of central tendency: Mean, median, and mode, weighted mean, Geometric mean, Measures of dispersion: Range, variance and standard deviation, Coefficient of variation, Interquartile range, Percentiles and quartiles.

UNIT IV

Measures of skewness: Coefficient of skewness and its interpretation, Measures of kurtosis: coefficient of kurtosis. Introduction to bivariate analysis: Cross tabulation, scatter plots. Pearson's and Spearman's correlation coefficient.

UNIT V

Simple linear regression, fitting of regression models in R, Evaluating regression models, Least Squares method, interpreting regression result and prediction using fitted regression model.

SKILL ENHANCEMENT COURSE IN STATISTICS: SEC-151L
(Statistical Data Analysis using R)

Full Marks=30 [End Semester Exam (30)]
Pass Marks =12 [End Semester Exam (12)]