



- To introduce basics of data analysis and handling of missing observations.

Learning outcomes:

- Apply and utilize its features of Microsoft Excel for data management and analysis.
- Apply Microsoft Excel and utilize its key features to identify and remove duplicate entries in a data set.
- Creating plots and charts of various types and editing legends
- Perform data analysis and interpret their significance
- Assess model fit and interpret simple linear regression fit.
- Apply vlookup function to join data tables
- Apply pivot tables and present their uses in data analysis.

UNIT I

Introduction to Microsoft Excel and its features, Basic data entry and editing techniques, Importing and exporting data, Sorting and filtering data, Removing duplicates, Data validation and data cleaning, handling missing data.

UNIT II

Creating charts and graphs in Excel, Bar charts, line graphs, pie charts, and scatter plots, Customizing charts and adding visual elements, Formatting and labeling axes, Adding trend lines to graphs. Frequency polygon and ogives and their use in locating central value of the data set.

UNIT III

Introduction to descriptive statistics, calculation and interpretation of measures of central tendency and partition values, measures of dispersion, computation of skewness and kurtosis using Excel functions. Introduction to Excel formulae and functions for statistical calculations, interpretation of descriptive statistics in the context of data analysis.

UNIT IV

Fitting of a straight line to data, fitting of higher-order polynomials of different degrees to data, Assessing model fit and interpreting regression results. Prediction using regression models, checking assumptions of regression analysis and finding the equation of best fit.

UNIT V

Introduction to bivariate analysis, calculation of correlation coefficient in Excel (Karl Pearson and Spearman), Introduction to logical and relational operators in Excel, Using vlookup to join datasets, Introduction to pivot tables and their applications in data analysis.

SKILL ENHANCEMENT COURSE IN STATISTICS: SEC-101L (Data Analysis using Microsoft Excel)

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



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 (5th ed.). Prentice Hall.
3. Bhattacharjee D. (2010): Practical Statistics Using Microsoft Excel. Asian Books, New Delhi.

**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.