24MA117 Statistical Techniques-I using Excel

Category: **Multidisciplinary Course** **2L 0T 2P 3C**

Pre-requisite**: Elementary Mathematics and Statistics**

Course Description:

Descriptive Statistics using MS Excel course equips with the skills to transform it into meaningful insights using descriptive statistics. Master essential functions to summarize data, create informative charts, and understand data variability. Leverage this knowledge to make data-driven decisions and communicate findings clearly, all within the familiar environment of MS Excel.

Course Aims and Objectives:

1. Develop proficiency in data handling with MS Excel
2. Understand and apply descriptive statistical techniques
3. Enhance data visualization skills
4. Utilize Excel for Bivariate Analysis
5. Promote analytical thinking and decision making

Course Outcomes: At the end of the course, the student will be able to…

CO1: Understand the meaning, scope, and limitations of statistics in business applications..**[K2]**

CO2: Apply Excel functions to format, organize, and secure statistical data.[**K3]**

CO3: Construct different types of diagrams and charts for data representation in business scenarios.**[K3]**

CO4: Compute measures of central tendency and dispersion to summarize business data.**[K3]**

CO5: Examine the relationship between two variables using correlation techniques.**[K4]**

Course Structure:

Unit -I Introduction & Basics of statistics (Theory 6Hrs + Lab 6Hrs)

Meaning, scope and limitations of statistics, collection of data: primary and secondary data, classification of data .Tabulation - definition, components of table and types of tables, construction of frequency distribution and types of scales.

Unit – II: MS Excel for Statistical Techniques (Theory 6Hrs + Lab 6Hrs)

Introduction to MS Excel - MS Excel options – Ribbon - sheets - saving Excel file as PDF, CSV and older versions - using Excel Shortcuts - copy, cut, paste, hide, unhide, and link the data in rows, columns and sheet - using paste special options - Formatting cells, rows, columns and sheets - protecting & unprotecting cells, rows, columns and sheets with or without password - page layout and printer properties.

Unit–III: Graphical & Diagrammatic Representation (Theory 6Hrs + Lab 6Hrs)

Diagrams-simple bar, multiple bar, subdivided bar, Pie chart, line Chart, histogram. Graphs-frequency polygon, frequency curve and O-give curves.

Unit – 4: Univariate Data Analysis (Theory 6Hrs + Lab 6Hrs)

Measures of Central Tendency: Features of good average, arithmetic mean, median, mode, geometric mean and harmonic mean. **Measures of Dispersion:** range, quartile deviation (QD), mean deviation (MD), variance, standard deviation (SD) and coefficient of variation (CV) . Skewness and Kurtosis: Meaning and coefficient of Skewness and Kurtosis.

Unit – 5: Bi-variate Data Analysis (Theory 6Hrs + Lab 6Hrs)

Correlation: Introduction - Bi-variate data, correlation- meaning, types of correlation, measures of correlation - Pearson correlation and Spearman's Rank correlation and their properties.

Linear Regression: Introduction- meaning, lines of linear regression model and properties of regression coefficients.

Text Books:

1. S.C.Gupta & VK Kapoor,2024, Fundamentals of Mathematical Statistics, Sultan Chand & Sons , 12th Edition.
2. S.C.Gupta,2023, Fundamentals of Statistics, Himalaya Publishing House Pvt. Ltd, Mumbai
3. Bernd Held., 2016, Microsoft Excel Functions & Formulas, Third Edition, Mercury Learning & Information.

References:

1. Levin Richard, L., David Rubin, S., et.al. (2017). Statistics for Management, 8th Edition, Pearson Education
2. John Walkenbach, 2016. MS Excel 2016 Bible, First Edition, Wiley & Sons.
3. Curtis Frye, 2016. Microsoft Excel Step by Step, Microsoft Practice Files.

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