

**MCM5023 DATA ANALYTICS**

Course Code	MCM5023	Semester	IV
Course Title	DATA ANALYTICS		
Credits	3	Type	NON COMMERCE

This course shall have 3 lecture hours, 2 practicals, 1 tutorial.

**This is a Skill based, employability based course.**

**Course Objective**

To facilitate the students to develop and hone statistical skills for managerial decision making.

**Learning Objectives**

- To help students learn, understand and practice data analytics.
- To identify the different components of the Excel workbook and worksheet.
- Help students to gain a basic understanding of computer programming with R.
- To learn the principles and procedures of correlation and regression analysis and how to allocate information in data sets using statistical software.

**Course Structure**

**UNIT I:**

**Introducing Excel**

Workbooks and Worksheets, Moving Around a Worksheet, Ribbon tabs, Types of commands on the Ribbon, Using Shortcut Menus, working with Dialogue Boxes, Task Panes, getting started on your worksheet, creating a chart, printing your worksheet, saving your worksheet, Exploring Data Types, Modifying Cell Contents, Deleting, Replacing, Editing of a cell-data entry techniques, Number Formatting.

**UNIT II :**

**Worksheet Operations**

Moving and resizing windows, switching among windows, activating a worksheet, Adding, deleting a worksheet, changing a sheet tab color, Rearranging worksheets, Hiding and un-hiding a worksheet, Worksheet View, Comparing sheets side by side, Selecting ranges, complete rows and columns, noncontiguous ranges, multi-sheet ranges, special types of cells. Copying or Moving Ranges. Paste Special dialogue box, Adding comments to cells.

**UNIT III:**

**Introduction to R Programming**

R and R Studio, Logical Arguments, Missing Values, Characters, Factors and Numeric, help in R,

Vector to Matrix, Matrix Access, Data Frames, Data Frame Access, Basic Data Manipulation Techniques, Usage of various apply functions –Outliers treatment.

#### **UNIT IV:**

##### **Correlation and Regression**

Analysis of Relationship, Positive and Negative Correlation, Perfect Correlation, Correlation Matrix, Scatter Plots, Simple Linear Regression, R Square, Adjusted R Square, Testing of Slope, Standard Error of Estimate, Overall Model Fitness, Assumptions of Linear Regression, Multiple Regression, Coefficients of Partial Determination, Durbin Watson Statistics, Variance Inflation Factor.

##### **Practicals**

- Conducting Correlation and Regression Analysis.
- Statistical Analysis using R Programming.
- Excel worksheet operations.

##### **Skills**

- Students get prepared to gather and analyze data using advanced statistical tools.
- Awareness of R programming language

##### **Learning/Course Outcomes**

- Acquire basic knowledge on R Programming.
- Able to perform Test of Hypothesis.
- Provide understanding on measurement of probability, probability distributions, regression and correlation analysis.

##### **Books for Reference:**

1. Anderson, David R., Thomas A. Williams and Dennis J. Sweeney. (2012). Statistics for Business and Economics. New Delhi: South Western.
2. Bernd Held , Excel Functions and Formulas :,BPB Publications.
3. Chandan Sengupta , Financial Analysis and Modelling using Excel and VBA:, Wiley 4.Hector Guerrero, Excel Data Analysis - Modelling and Simulation:, Springer.
5. John Walkenbach, Excel 2013 Bible:, Wiley.
6. Ken Black (2013). Business Statistics, New Delhi, Wiley.
7. Lee, Cheng. et al. (2013). Statistics for Business and Financial Economics. New York: Heidelberg Dordrecht.
8. Levin, Richard I. and David S. Rubin (1994). Statistics for Management. New Delhi: Prentice Hall.
9. Waller, Derek. (2008). Statistics for Business. London: BH Publications.
10. Winston , Microsoft Excel 2013: Data Analysis and Business Modeling:, PHI