23CSE301: DATA ANALYTICS TOOLS

Hours/Week: 3 I.A. Marks: 30

Credits: 3 Exam. Marks: 70

Course Learning Objectives:

- Designed to provide a hands-on approach to learning data analytics using Excel.
- Covers a range of topics, from basic functions to advanced features, ensuring students are proficient in using Excel for various data analysis tasks.

Course Outcomes: After completing the course, the students will be able to,

- Understand the fundamentals of data analytics.
- Study the basic concepts of Excel spreadsheet Functions
- Realize the importance of filtering functions, charts and tables.
- Identify the importance and usage of Excel functions and its features
- Understand the various visualization techniques.

Unit – I **9 hrs**

Introduction to Data Analytics: Overview of data analytics and its applications, Importance of data-driven decision-making, Introduction to basic statistical concepts; Data Collection and Cleaning: Methods of data collection, Handling missing data, Data preprocessing techniques

Unit-II **9 hrs**

Introduction to Excel for Data Analytics: Overview of Excel as a data analysis tool, Basic Excel functions and formulas, Data importing and exporting

Data Cleaning and Preparation in Excel: Identifying and handling missing data, Data sorting and filtering, Text-to-columns and data formatting techniques

Unit-III **9 hrs**

Exploratory Data Analysis (EDA) in Excel: Creating charts and graphs for data visualization, Descriptive statistics using Excel functions, Conditional formatting for data exploration

Statistical Analysis in Excel: Basic statistical functions in Excel (mean, median, mode, etc.), Hypothesis testing using Excel, Correlation and regression analysis in Excel

Unit-IV **9 hrs**

Advanced Excel Functions for Data Analysis: VLOOKUP, HLOOKUP, and INDEX-MATCH functions, IF statements and nested functions,

Data Ethics in Excel: Ethical considerations in data analysis, Privacy issues and data protection in Excel, Responsible data handling practices

REFERENCE BOOKS:

1. "Microsoft Excel Data Analysis and Business Modeling" by Wayne L. Winston
2. Online tutorials and Microsoft documentation for relevant Excel features
3. John Paul Mueller, Python for Data Science for Dummies, Wiley 2015