INT217:INTRODUCTION TO DATA MANAGEMENT

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: apply the various techniques and functions over spreadsheet for getting various insights of data

CO2 :: utilize data representation methods like pivot tables and Power Pivoting

CO3 :: determining the need of the graphical representation in the spreadsheet by using various graphs and charts outline

CO4 :: apply he various techniques to validate data in the spreadsheet and perform what-if analysis

CO5 :: employ macros to automate and optimize spreadsheets

CO6 :: extend the concepts of creating interactive dashboards using slicers, macros and advanced charts

Unit I

Spreadsheet functions to organize data : cell reference styles, creating and working with formulas, text functions, date and time functions, lookup and reference functions, mathematical and statistical functions, information and volatile functions, logical and financial functions, formula auditing, error handling, string functions

Introduction to Microsoft Excel : UI Basics : introduction to UI basics, about excel, workbooks and worksheets, customizing excel, reference styles, number formatting, custom number formatting, conditional formatting, format as table

Unit II

Data representation and manipulation : filter, advanced filter for complex criterion, sorting and custom sorting, pivot table and pivot chart, power pivot, import data from different sources into power pivot, reducing file size in power pivoting, connect to multiple different external datasets, DAX functions

Unit III

Advanced graphing and charting : charts, combo charts, working with objects charts, dynamic charts and dynamic data source for charts print areas, views for a worksheet, various printing techniques

Data protection techniques : worksheet protection, protect specific range, workbook protection and encryption

Unit IV

What-if analysis : Goal Seeker, Scenario Manager, Data Table

Data Validation : Understanding the need for Data Validation, creating a Validation List, adding Custom Validation Error, Dynamic Formulas by using Validation Techniques

Unit V

Macros : Understanding Excel Macros, Activating the Developer Tab in Excel, creating a Macro with the Macro Recorder, creating Buttons to Run Macros

Unit VI

Creating an interactive dashboard : Principles of Dashboarding, mastering charting techniques, Macros for interactive dashboard, Visualizations with Sparklines and Shapes, specialized charts – Waterfall chart, funnel chart, adding maps on dashboard, adding slicers and timelines, connecting slicers with multiple pivot tables, adding hyperlinks to navigate between different sheets

Recent trends : Excel Copilot (AI Assistant): Automating repetitive tasks using Microsoft's Copilot in Excel, Hyper-Automated Dashboards, AI-Powered Add-ins for Excel

List of Practicals / Experiments:

List of practicals/Experiments

- Introduction to spreadsheets: basic terminologies, spreadsheet environment,object model of excel,customizing excel,reference style,number formatting,custom number formatting, conditional formatting,format as table
- Representation and manipulation of data: filter, sorting techniques, pivot table and pivot chart

- Charts and graphs: advance graph and charts
- Data cleaning: Perform data cleaning using String functions, date and Time Functions,Use Text to Columns, Removing unwanted values and handling NULL values in Excel,Restructuring the dataset,Removing Extra spaces or white spaces

References:

1. FUNDAMENTALS OF BUSINESS ANALYTICS by R.N. PRASAD, SEEMA ACHARYA, WILEY

2. EXCEL HACKS,2/ED TIPS & TOOLS FOR STREAMLINING YOUR SPREADSHEETS by DAVID, SHROFF/O'REILLY