General Elective Course- 6.2 (GE-6.2): Data Visualisation

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
GE 6.2- Data Visualisation	4	2	0	2	Pass in Class XII	Nil

Learning Objectives

The course helps students learn the technique to visualise data and to gain hands-on experience with creating visualisations of financial data.

Learning outcomes

After the completion of the course, the learners will be able to:

1. Recognise the concept of data visualization.
2. Develop data visualization using spreadsheets.
3. Explain effective visualisations and dashboard using spreadsheet.
4. Analyse financial data.
5. Use Tableau public.

SYLLABUS OF GE-6.2

Unit 1: Introduction (3 hours)

Concept of Data Visualisation, Significance and role, Functions of data analyst, Types of charts, Choose an appropriate visualisation based on your data

Unit 2: Data Visualisation using Spreadsheet (4 hours)

Data Visualizations using Conditional Formatting, Sparklines and Number Formats, Charts - line charts, pie charts, scatter charts, area charts, column and bar charts, histogram, Specialized Charts: hierarchical charts, waterfall, funnel, stock charts and combo charts.

Unit 3: Creating Visualisation and Dashboard using Spreadsheet (7 hours)

Working with pivot tables and charts, Slicer, Timeline, Power Query, Power Pivot, Power View, Power Map.

Unit 4: Financial Data Analysis Using Power BI (8 hours)

Introduction to Power BI, Possible Data Sources, Cleansing, Transforming and Loading Data, Add Columns, Remove Columns, Split and Rename column and Change data types, Merge data, Append data, Create report and Power BI Dashboard using visualisation controls, Publish report and export it to PDF.

Unit 5: Working with Tableau Public (8 hours)
Introduction, Loading the Data and Preparing the Sheets, Bar and Line Combination Chart, Horizontal Bars Chart, Candlesticks and stock markets, Creating the Tableau Dashboard, and Adding a Brand Filter and Interpretation

Practical Exercises (60 hours):
The learners are required to:

1. Discuss the significance of data visualisation.
2. Use spreadsheets to create data visualisation.
3. Create dashboards for MIS.
4. Export and share dashboards and visualisations with the help of example
5. Perform financial data analysis using power BI.
6. Practice quantitative analysis through the help of Spreadsheets, Power BI, and Tableau.
7. Prepare a project on how to create the Tableau Dashboard.

Suggested Readings:

- Ferrari, A., & Russo, M. (2017). *Analyzing data with microsoft power bi and power pivot for excel.* PHI.
- Powell, B. (2017). *Microsoft power bi cookbook.* Packt Publishing Limited.
- Brown, L. (2020). *Tableau desktop cookbook.* O'Reilly Media.
- Sleeper, R. (2018). *Practical tableau.* O'Reilly Media.

Note:
The General Purpose Software referred in this course will be notified by the University Department every three years. If the specific features, referred to in the detailed course above, are not available in that software, to that extent it will be deemed to have been modified.
Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.