COURSE OUTLINE: UNLOCKING THE POWER OF DATA WITH POWER BI

Class 1: Introduction to Power BI and Data Visualization
Topics Covered:
o What is Power BI? Overview of Power BI ecosystem (Desktop, Service, Mobile).
o Importance of data visualization in decision-making.
o Installing Power BI Desktop and setting up the environment.
o Navigating the Power BI interface.
o Overview of key components: Reports, Dashboards, Datasets.
• **Hands-On Activity:**
o Explore sample datasets in Power BI.
o Create a simple visualization (e.g., bar chart, table)

Class 2: Data Preparation and Transformation
Topics Covered:
o Introduction to Power Query Editor.
o Connecting to data sources (Excel, CSV, databases, etc.).
o Data cleaning and transformation techniques:
▪ Removing duplicates, filtering rows, and handling missing data.
▪ Splitting columns, changing data types, and adding custom columns.
o Introduction to M language (basics of Power Query formulas).
Hands-On Activity:
o Load and transform a messy dataset using Power Query

Class 3: Data Modeling and Relationships
Topics Covered:
o Understanding data modeling concepts.
o Creating relationships between tables (one-to-one, one-to-many).
o Introduction to DAX (Data Analysis Expressions) basics.
o Calculated columns vs. measures.
• **Hands-On Activity:**
o Build a data model with multiple tables.
o Create simple DAX measures (e.g., SUM, AVERAGE).

Class 4: Advanced DAX for Analytics
Topics Covered:
o Deep dive into DAX functions:
▪ Aggregation functions (SUM, AVERAGE, COUNT).
▪ Logical functions (IF, AND, OR).
▪ Time intelligence functions (TOTALYTD, SAMEPERIODLASTYEAR).
o Creating calculated tables and measures.
o Best practices for writing efficient DAX.
• **Hands-On Activity:**
o Build a sales analysis report using advanced DAX measures

Class 5: Designing Interactive Reports
Topics Covered:
o Visualization best practices. o Choosing the right chart types for different data. o Customizing visuals (colors, titles, tooltips). o Adding interactivity with slicers, filters, and drill-through. o Introduction to bookmarks and selection panes.
Hands-On Activity:
o Design an interactive sales dashboard with multiple visuals.

Class 6: Publishing and Sharing Insights
Topics Covered:
o Introduction to Power BI Service.
o Publishing reports from Power BI Desktop to Power BI Service.
o Creating and sharing dashboards.
o Configuring row-level security (RLS). o Scheduling data refreshes.
Hands-On Activity:
o Publish a report to Power BI Service and share it with peers.

Class 7: Advanced Features and Integrations
Topics Covered:
o Using Power BI with other tools (Excel, SharePoint, Teams).
o Introduction to Power BI Mobile App.
o Exploring AI visuals (Key Influencers, Q&A).
o Introduction to Power BI Premium and Embedded.
Hands-On Activity:
o Integrate Power BI with Excel and explore AI visuals.

Class 8: Capstone Project and Best Practices
Topics Covered:
o Recap of key concepts and skills learned. o Best practices for designing effective dashboards. o Common pitfalls and troubleshooting tips.
Hands-On Activity:
o Work on a capstone project: Build a complete end-to-end Power BI solution using a real-world dataset. o Present your project to the class.

Prerequisites: Basic understanding of data concepts and familiarity with Excel is helpful but not mandatory.

Tools Required: Power BI Desktop (free version), Power BI Service (free account).

Duration: Each class can be 1.5 to 2 hours long, depending on the audience.