Duration Suggestion: 25–   **Mode:** Hands-on + Practical Exercises

Outcome: Students will be able to build, publish, and share interactive dashboards using Power BI.

Module 1: Introduction to Power BI

- What is Business Intelligence (BI)?

- Overview of Power BI Ecosystem

- Components of Power BI (Desktop, Service, Mobile, Gateway)

- Installation & Setup of Power BI Desktop

- Power BI Licensing & Accounts

Module 2: Getting Started with Power BI Desktop

- Power BI Desktop Interface & Features

- Connecting to Different Data Sources (Excel, SQL Server, CSV, Web, etc.)

- Import vs DirectQuery Modes

- Data Model Basics (Tables, Relationships, Keys)

- Creating Simple Reports & Visualizations

Module 3: Power Query Editor (Data Preparation)

- Introduction to Power Query Editor

- Data Cleaning & Transformation

    o Removing duplicates, blanks, and errors

    o Splitting & merging columns

    o Changing data types

- Combining Data (Merge Queries, Append Queries)

- Creating Custom Columns in Power Query

- Applied Steps & Query Dependencies

Module 4: Data Modeling in Power BI

- Introduction to Data Modeling

- Understanding Relationships (One-to-One, One-to-Many, Many-to-Many)

- Star & Snowflake Schema Basics

- Creating Hierarchies

- Role of Primary Keys & Foreign Keys in Power BI

Module 5: Introduction to DAX (Data Analysis Expressions)

- What is DAX? Why it is important?

- Calculated Columns vs Measures

- Basic DAX Functions:

  - SUM, COUNT, AVERAGE, MIN, MAX

  - CALCULATE, FILTER, ALL, DISTINCT

- Time Intelligence Functions:

  - TOTALYTD, SAMEPERIODLASTYEAR, DATEADD

- Creating KPIs with DAX

Module 6: Data Visualization in Power BI

- Overview of Visualizations in Power BI

- Creating Charts (Bar, Line, Pie, Map, etc.)

- Slicers & Filters

- Drillthrough, Drilldown & Cross Filtering

- Custom Visuals from AppSource

- Formatting & Themes in Reports

Module 7: Power BI Service (Cloud)

- Introduction to Power BI Service (PowerBI.com)

- Creating and Managing Power BI Accounts

- Publishing Reports from Desktop to Service

- Creating Dashboards in Power BI Service

- Sharing & Collaboration Features

- Data Refresh & Gateway Setup

Module 8: Power BI Best Practices & Project

- Report Design Best Practices

- Performance Optimization Tips

- Security Basics: Row-Level Security (RLS)

- Case Study / Mini Project: End-to-End Dashboard Creation.