

Microsoft Power BI – From Data to Insights

Duration: 3 Days (6 Hours per Day)

Target Audience: Managerial-level participants from Sales, Finance, IT, and Production departments

Prerequisite: No prior Power BI experience required. Basic knowledge of Microsoft Excel is recommended.

Training Objective

Enable participants to build end-to-end Business Intelligence solutions by connecting to multiple data sources, transforming data, creating data models, developing DAX calculations, designing interactive reports and dashboards, publishing reports to the Power BI Service, and implementing collaboration, sharing, and security.

Day 1 – Power BI Fundamentals & Data Preparation

Module 1: Introduction to Business Intelligence & Power BI

- Introduction to Business Intelligence (BI)
 - Power BI Ecosystem
 - Power BI Desktop, Service and Mobile
 - Power BI Workflow
 - Power BI Licensing Overview
 - Installation and Interface
 - Import vs DirectQuery
 - Understanding Power BI File Types
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Module 2: Connecting to Data

- Connecting to Excel
- CSV and Text Files
- Folder Data
- SQL Server
- Web Data

- Multiple Data Sources
 - Data Refresh Basics
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Module 3: Data Transformation with Power Query

- Power Query Editor Interface
 - Query Steps
 - Data Profiling
 - Data Types
 - Filtering and Sorting
 - Remove Duplicates
 - Split and Merge Columns
 - Replace Values
 - Pivot and Unpivot
 - Group By
 - Merge Queries
 - Append Queries
 - Creating Custom Columns
 - Conditional Columns
 - Date Transformations
 - Loading Data
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Module 4: Data Modeling Fundamentals

- What is Data Modeling?
- Fact and Dimension Tables
- Star Schema
- Snowflake Schema
- Creating Relationships
- Relationship Types

- Cardinality
 - Cross Filter Direction
 - Managing Data Models
 - Model Best Practices
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Day 2 – Data Analysis & Interactive Reporting

Module 5: DAX Fundamentals

- Introduction to DAX
- Calculated Columns
- Measures
- Difference between Columns and Measures
- Row Context vs Filter Context

Common DAX Functions

- SUM
 - SUMX
 - CALCULATE
 - COUNTROWS
 - DISTINCTCOUNT
 - RELATED
 - DIVIDE
 - IF
 - SWITCH
 - SELECTEDVALUE
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Module 6: Time Intelligence

- Date Tables
- Calendar Tables
- Year-to-Date (YTD)

- Month-to-Date (MTD)
 - Quarter-to-Date (QTD)
 - Previous Period Analysis
 - Year-over-Year Comparison
 - Running Totals
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Module 7: Report Development

- Report Canvas
 - Themes
 - Formatting
 - Visual Interactions
 - Drill Down
 - Drill Through
 - Tooltips
 - Bookmarks
 - Buttons
 - Page Navigation
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Module 8: Data Visualization

- Tables and Matrix
- Cards
- KPI Visuals
- Bar and Column Charts
- Line Charts
- Combo Charts
- Pie and Donut Charts
- Treemap
- Waterfall

- Funnel
 - Scatter Chart
 - Maps
 - Gauge
 - Slicers
 - Smart Narrative
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Day 3 – Dashboards, Power BI Service & Capstone

Module 9: Advanced Analytics

- Top N Analysis
 - Conditional Formatting
 - Ranking
 - Forecasting
 - Trend Analysis
 - Key Influencers Visual
 - Decomposition Tree
 - AI Visuals
 - Analyze Feature
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Module 10: Power BI Service

- Publishing Reports
- Workspaces
- Dashboards
- Apps
- Data Refresh
- Scheduled Refresh
- Data Gateway Overview
- Sharing Reports

- Collaboration
 - Exporting Reports
 - Mobile View
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Module 11: Security & Governance

- Row-Level Security (RLS)
 - Creating Roles
 - Testing Roles
 - Workspace Roles
 - Dataset Permissions
 - Best Practices
 - Performance Optimization
 - Report Optimization
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Module 12: Capstone Project – End-to-End Business Intelligence Solution

Participants will work on a real-world business scenario by applying all concepts covered during the training.

Capstone Activities

- Connect to multiple data sources
- Clean and transform data using **Power Query**
- Build a robust **Star Schema** data model
- Create relationships between multiple tables
- Develop **Calculated Columns** and **DAX Measures**
- Implement **Time Intelligence** calculations
- Design a professional, interactive report
- Create executive dashboards with:
 - KPI Cards
 - Drill-down Reports

- Drill-through Pages
- Tooltips
- Bookmarks
- Slicers
- Navigation Buttons
- Publish reports to **Power BI Service**
- Configure dashboard sharing and collaboration
- Implement **Row-Level Security (RLS)**
- Present business insights and recommendations

Business Scenarios

- Executive Sales Performance Dashboard
- Financial Performance & Profitability Analysis
- Production Operations Dashboard
- IT Project & Resource Utilization Dashboard

Capstone Deliverable

- A complete end-to-end Power BI solution demonstrating data ingestion, transformation, modeling, DAX calculations, interactive report development, dashboard creation, publishing to the Power BI Service, collaboration, and security implementation.
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Key Learning Outcomes

- Understand the complete Power BI ecosystem and BI workflow.
- Connect to and transform data from multiple sources using Power Query.
- Design efficient data models using star schema principles.
- Develop business calculations using DAX.
- Build interactive reports and executive dashboards.
- Perform advanced business analysis using Power BI visuals and AI capabilities.
- Publish, share, and collaborate using the Power BI Service.
- Implement Row-Level Security (RLS) and reporting best practices.

- Deliver end-to-end Business Intelligence solutions for organizational decision-making.