

Comprehensive Power BI

Module 1: Introduction to Power BI

- Overview of Business Intelligence & Data Visualization
 - Introduction to Power BI & Its Ecosystem
 - Components of Power BI:
 - Power BI Desktop
 - Power BI Service
 - Power BI Mobile
 - Power BI Report Server
 - Installing & Setting Up Power BI Desktop
 - Understanding Power BI Licensing & Pricing
-

Module 2: Getting Started with Power BI

- Understanding Power BI Interface
 - Connecting to Various Data Sources:
 - Excel, SQL Server, CSV, Web Data, APIs
 - Online Services (SharePoint, Google Analytics, Azure, etc.)
 - Importing & Transforming Data in Power BI
 - Understanding Queries & Data Refresh
 - Basic Data Cleaning & Transformation
-

Module 3: Power Query - Data Transformation

- Introduction to Power Query
- Data Cleaning & Shaping Techniques
- Using Query Editor for Data Transformation
- Removing Duplicates, Changing Data Types, Replacing Values

- Splitting & Merging Columns
 - Pivoting & Unpivoting Data
 - Appending & Merging Queries
-

Module 4: Data Modeling in Power BI

- Understanding Data Modeling Concepts
 - Relationships & Cardinality in Power BI
 - Star Schema vs Snowflake Schema
 - Creating Relationships Between Tables
 - Managing Relationships & Using Auto-Detect
 - Best Practices for Data Modeling
-

Module 5: Introduction to DAX (Data Analysis Expressions)

- Overview of DAX & Its Importance
 - Creating Calculated Columns & Measures
 - Understanding Row Context & Filter Context
 - Aggregation Functions (SUM, COUNT, AVERAGE, MIN, MAX)
 - Logical Functions (IF, SWITCH)
 - Mathematical & Statistical Functions
 - Text Functions (CONCATENATE, LEFT, RIGHT, MID)
-

Module 6: Advanced DAX Functions

- Time Intelligence Functions:
 - DATEADD, DATEDIFF, SAMEPERIODLASTYEAR, TOTALYTD
- Filter Functions:
 - ALL, FILTER, CALCULATE, REMOVEFILTERS
- Ranking Functions:
 - RANKX, TOPN

- Parent-Child Functions (PATH, PATHLENGTH)
 - Working with Variables in DAX
-

Module 7: Data Visualization & Report Designing

- Best Practices for Data Visualization
 - Creating Interactive & Insightful Dashboards
 - Power BI Built-in Visuals:
 - Tables & Matrices
 - Bar, Line, Pie, and Area Charts
 - TreeMap, Scatter Plot, Waterfall Chart
 - Funnel, Gauge, KPI Indicators
 - Card Visuals & Multi-Row Cards
 - Custom Visuals from Power BI Marketplace
 - Conditional Formatting in Visuals
 - Creating Drill-Through & Drill-Down Reports
 - Tooltips & Bookmarks for Enhanced Interactivity
-

Module 8: Working with Filters & Slicers

- Page-Level, Report-Level, & Visual-Level Filters
 - Using Slicers for Interactive Reports
 - Synchronizing Slicers Across Multiple Pages
 - Using Advanced Filters in Power BI
 - Implementing Relative Date Filters
-

Module 9: Power BI Service - Cloud Collaboration

- Publishing Reports to Power BI Service
- Understanding Workspaces & Apps
- Sharing & Collaborating on Reports

- Scheduling Data Refresh in Power BI Service
 - Power BI Gateway Setup for Live Data Connection
-

Module 10: Power BI Row-Level Security (RLS)

- Understanding Row-Level Security
 - Creating Security Roles & Assigning Users
 - Dynamic vs Static RLS
 - Implementing RLS with DAX
 - Testing & Validating Security Roles
-

Module 11: Power BI Embedded & Power BI API

- Embedding Power BI Reports in Websites & Apps
 - Using Power BI REST API for Automation
 - Power BI Integration with Microsoft Teams, SharePoint, & Excel
-

Module 12: Power BI Performance Optimization

- Best Practices for Performance Tuning
 - Optimizing DAX Queries for Faster Execution
 - Reducing Model Size with Aggregations
 - Using Composite Models & DirectQuery Mode
 - Optimizing Data Refresh Performance
-

Module 13: Power BI with SQL & Excel

- Connecting Power BI with SQL Databases
 - Writing SQL Queries for Power BI
 - Importing Data from Excel into Power BI
 - Power BI vs Excel Pivot Tables & Charts
-

Module 14: Power BI & Advanced Analytics (AI Features)

- Introduction to AI Features in Power BI
 - Using AI Visuals: Decomposition Tree, Key Influencers
 - Implementing Forecasting & Anomaly Detection
 - Integration with Azure Machine Learning
-

Module 15: Power Automate & Power BI Integration

- Introduction to Power Automate (Microsoft Flow)
 - Automating Workflows with Power BI Triggers
 - Sending Automated Alerts Based on Power BI Data
-

Module 16: Real-World Power BI Projects

- **Project 1:** Sales & Revenue Dashboard
 - **Project 2:** HR Analytics & Employee Performance Report
 - **Project 3:** Financial Reporting & Budgeting Dashboard
 - **Project 4:** Customer Segmentation & Market Analysis
-

Module 17: Power BI Certification & Career Guidance

- Power BI Certification Roadmap (PL-300: Microsoft Power BI Data Analyst)
- Preparing for Power BI Interviews
- Resume Building & Real-World Power BI Use Cases