

Power BI Course Content

Introduction to Microsoft Power BI

This course covers essential Power BI concepts, starting with an introduction to the Microsoft Power BI tool and its core features. Here's a breakdown of the curriculum:

Key Features and Workflow in Power BI

- **Desktop Application & BI Service:** Explore the Power BI Desktop application and BI service, including importing data from various sources like files and databases.
- **Data Sourcing from Web:** Learn to source data from web services, including OData and Azure.
- **Dashboard Creation and Visualization:** Build and customize dashboards using data visualization techniques.
- **Publishing to Cloud:** Understand how to publish Power BI reports to the cloud for easy sharing.
- **DAX Data Computation:** Delve into DAX formulas for data analysis, including understanding row context, filter context, and calculations.
- **Data Modeling and Relationships:** Explore Power BI's data modeling features, such as building relationships between tables and creating dynamic data models.
- **Advanced Visualization Tools:** Work with advanced visual elements like Power View, Power Map, and Power Q&A.

Hands-On Exercises

- **Building a Power BI Dashboard:** Practice creating a dashboard, sourcing data from the web, and publishing it to the cloud.
- **Working with Power Tables:** Create and manipulate Power tables for data insights.

Extracting Data in Power BI

- **Power Query for Self-Service ETL:** Introduction to Power Query for Extract, Transform, Load (ETL) tasks, including data mashup techniques and working with Excel.
- **Connecting to Data Sources:** Learn to connect to various data sources such as files, folders, databases, and Analysis Services.
- **Power BI Personal Gateway:** Understand the Power BI Personal Gateway for seamless data connectivity across services.

Hands-On Exercises

- **Data Connections:** Connect to a database, import data from an Excel file, and integrate SQL Server data.
- **Power Query:** Explore the functionalities of Power Query for data transformation and filtering.

Power Query for Data Transformation

- **Installation & Configuration:** Setting up Power BI Desktop, including system requirements and configuration.
- **Query Editor:** Use the Query Editor for data transformations, including column formatting, pivot/unpivot, and merging data.
- **Advanced Data Manipulation:** Work with various data types, relational operations, date/time calculations, and M functions.

Hands-On Exercises

- **Using the Query Editor:** Practice transforming tables, using indexes, and applying conditional formatting.
- **Writing Power Queries:** Write custom queries to manipulate and prepare data.

Power Pivot and DAX (Data Analysis Expressions)

- **Introduction to Power Pivot:** Learn about the xVelocity engine, advantages of Power Pivot, and working with strongly-typed datasets.
- **DAX Queries for Analysis:** Understand how to use DAX to build complex data analysis expressions for in-depth data insights.

Advanced DAX and Power Pivot Functionalities

- **Expressions and Measures:** Understand how to create and use expressions, measures, and calculated members to derive insights.
- **Evaluation and Filter Context:** Learn row and filter contexts, context interactions, and schema relations for dynamic data filtering.
- **Function Libraries:** Work with Power BI's extensive DAX functions, including Table, Logical, Text, Iterator, Time Intelligence, and Information functions.
- **Advanced Calculations:** Create cumulative charts, calculated tables, and rankings, and apply ranking over grouped data.
- **Embedding Power Pivot:** Explore advanced features of Power Pivot and how to embed it into Power BI Desktop for enhanced data analysis.

Hands-On Exercises

- **Using Power Pivot:** Practice creating Power Pivot tables, applying filters, and using advanced functions such as date and time functions.
- **Embedding and DAX Queries:** Embed Power Pivot in Power BI Desktop, and create DAX queries for calculated columns, tables, and measures.

Data Visualization and Analytics in Power BI

- **Power BI Visualization Tools:** Gain expertise in Power BI Desktop's visualization capabilities, including Power View and Power Map.
- **Customizing Visuals:** Learn formatting, customizing visuals, and interactive data visualization techniques, including SandDance visualizations.
- **Deploying Power View:** Deploy and use Power View on SharePoint and Excel for data analysis and reporting.
- **Top-Down and Bottom-Up Analytics:** Explore different analytical approaches, comparing volume and value-based analytics.
- **Report Creation:** Use Power View to create rich visual formats like charts, scorecards, and reports, and categorize, filter, and sort data effectively.
- **Working with Hierarchies:** Master the creation and use of date and business hierarchies, and handle hierarchy-related challenges.

Hands-On Exercises

- **Creating Visuals and Reports:** Create Power View and Power Map visuals, format and customize them, and deploy Power View on SharePoint and Excel.
- **Advanced Analytics and Embedding:** Implement top-down and bottom-up analytics, add custom visuals, authenticate Power BI web applications, and embed dashboards in applications.

Power Q&A: Natural Language Querying

- **Introduction to Power Q&A:** Discover Power Q&A, an intuitive tool for answering complex queries using natural language.
- **Interactive Data Discovery:** Generate answers in charts, graphs, and other visual formats, and conduct ad-hoc analytics.
- **Integration and Best Practices:** Learn best practices for integrating Power Q&A with SaaS applications and performing efficient data discovery.

Hands-On Exercises

- **Querying and Analytics:** Write natural language queries, get visual answers, build ad-hoc analytics, and pin tiles to the dashboard for quick access.

Power BI Desktop & Administration

This course also includes **two major projects** and **two mini-projects** to give hands-on experience and consolidate the learning outcomes across all modules.

**** This Course includes 2 Major Project and 2 mini projects.**