

**Data Analytics using Power BI**

**Course Number:** PBI-110  
**Duration:** 5 days

**Overview**

This Data Analytics using Power BI training course teaches attendees how to implement best practices for modeling, visualizing, and analyzing data with Power BI. Participants learn how to access and process data from various sources, including relational and non-relational databases. Attendees also learn how to manage and deploy reports and dashboards for sharing and content distribution.

**Note:** This course includes topics from Microsoft Official Courses Power BI Data Analyst (PL-300, 3 days) and Designing and Implementing Enterprise-Scale Analytics Solutions Using Microsoft Azure and Microsoft Power BI (DP-500, 4 days).

**Prerequisites**

All attendees must have experience working with data in the cloud, specifically:

* Understand core data concepts
* Experience working with relational and non-relational databases
* Knowledge of data analysis and visualization concepts

**Materials**

All Power BI training students receive comprehensive courseware.

**Software Needed on Each Student PC**

* A recent version of Windows (Windows 10 or later) with at least 8 GB of RAM
* Microsoft Office installed
* Power BI Desktop installed

**Objectives**

* Ingest, clean, and transform data
* Model data for performance and scalability
* Design and create reports for data analysis
* Apply and perform advanced report analytics
* Manage and share reports
* Working with datasets, dataflows, and datamarts
* Working with calculation groups
* Using DAX Studio and Tabular Editor tools to optimize report performance
* Create paginated reports in Power BI

**Outline**

* Get Started with Microsoft Data Analytics
  + Data Analytics and Microsoft
  + Getting Started with Power BI
  + Getting Started in Power BI Desktop
  + Getting Started
  + After completing this module, students will be able to:
  + Explore the different roles in data
  + Identify the tasks that are performed by a data analyst
  + Describe the Power BI landscape of products and services
  + Use the Power BI service
* Prepare Data in Power BI
  + Get data from various data sources
  + Preparing Data in Power BI Desktop
  + Prepare Data
  + After completing this module, students will be able to:
  + Identify and retrieve data from different data sources
  + Understand the connection methods and their performance implications
  + Use Microsoft Dataverse
  + Connect to a data flow
* Clean, Transform, and Load Data in Power BI
  + Data shaping
  + Enhance the data structure
  + Data Profiling
  + Transforming and Loading Data in Power BI Desktop
  + Loading Data
  + After completing this module, students will be able to:
  + Apply data shape transformations
  + Enhance the structure of the data
  + Profile and examine the data
* Design a Data Model in Power BI
  + Introduction to data modeling
  + Working with tables
  + Dimensions and Hierarchies
  + Data Modeling in Power BI Desktop
  + Create Model Relationships
  + Configure Tables
  + Review the model interface
  + Create Quick Measures
  + Advanced Data Modeling in Power BI Desktop
  + Configure many-to-many relationships
  + Enforce row-level security
  + After completing this module, students will be able to:
  + Understand the basics of data modeling
  + Define relationships and their cardinality
  + Implement Dimensions and Hierarchies
  + Create histograms and rankings
* Create Model Calculations using DAX in Power BI
  + Introduction to DAX
  + DAX context
  + Advanced DAX
  + Advanced DAX in Power BI Desktop
  + Use the CALCULATE() function to manipulate filter context
  + Use Time Intelligence functions
  + Introduction to DAX in Power BI Desktop
  + Create calculated tables
  + Create calculated columns
  + Create measures
  + After completing this module, students will be able to:
  + Understand DAX
  + Use DAX for simple formulas and expressions
  + Create calculated tables and measures
  + Build simple measures
  + Work with Time Intelligence and Key Performance Indicators
* Optimize Model Performance in Power BI
  + Optimize the model for performance
  + Optimize DirectQuery Models
  + Create and manage Aggregations
  + After completing this module, students will be able to:
  + Understand the importance of variables
  + Enhance the data model
  + Optimize the storage model
  + Implement aggregations
* Create Reports in Power BI
  + Design a report
  + Enhance the report
  + Designing a report in Power BI Desktop
  + Create a live connection in Power BI Desktop
  + Design a report
  + Configure visual fields and format properties
  + Enhancing reports with interaction and formatting in Power BI Desktop
  + Create and configure Sync Slicers
  + Create a drillthrough page
  + Apply conditional formatting
  + Create and use Bookmarks
  + After completing this module, students will be able to:
  + Design a report page layout
  + Select and add effective visualizations
  + Add basic report functionality
  + Add report navigation and interactions
  + Improve report performance
  + Design for accessibility
* Create Dashboards in Power BI
  + Create a Dashboard
  + Real-time Dashboards
  + Enhance a Dashboard
  + Creating a Dashboard in Power BI Service
  + Create a Dashboard
  + Pin visuals to a Dashboard
  + Configure a Dashboard tile alert
  + Use Q&A to create a dashboard tile
  + After completing this module, students will be able to:
  + Create a Dashboard
  + Understand real-time Dashboards
  + Enhance Dashboard usability
* Enhance reports for usability and storytelling in Power BI
  + Paginated report overview
  + Create Paginated reports
  + Creating a Paginated report in Power BI Desktop
  + Use Power BI Report Builder
  + Design a multi-page report layout
  + Define a data source
  + Define a dataset
  + Create a report parameter
  + Export a report to PDF
  + After completing this module, students will be able to:
  + Explain paginated reports
  + Create a paginated report
  + Create and configure a data source and dataset
  + Work with charts and tables
  + Publish a report
* Perform Advanced Analytics in Power BI
  + Advanced Analytics
  + Data Insights through AI visuals
  + Data Analysis in Power BI Desktop
  + Create animated scatter charts
  + Use the visual to forecast values
  + Work with Decomposition Tree visual
  + Work with the Key Influencers visual
  + After completing this module, students will be able to:
  + Explore statistical summary
  + Use the Analyze feature
  + Identify outliers in data
  + Conduct time-series analysis
  + Use the AI visuals
  + Use the Advanced Analytics custom visual
* Manage Datasets in Power BI
  + Parameters
  + Datasets
  + Security in Power BI
  + After completing this module, students will be able to:
  + Create and work with parameters
  + Manage datasets
  + Configure dataset refresh
  + Troubleshoot gateway connectivity
  + Understand the aspects of Power BI security
  + Configure row-level security roles and group memberships
* Create and Manage Workspaces in Power BI
  + Creating Workspaces
  + Sharing and Managing Assets
  + Publishing and Sharing Power BI Content
  + Map security principals to dataset roles
  + Share a dashboard
  + Publish an App
  + After completing this module, students will be able to:
  + Create and manage a workspace
  + Understand workspace collaboration
  + Monitor workspace usage and performance
  + Distribute an App
* Create calculation groups
  + Explore how calculation groups work.
  + Maintain calculation groups in a model.
  + Use calculation groups in a Power BI report
* Optimize Power BI Performance
  + Optimize queries using the performance analyzer
  + Optimize a data model using aggregations, incremental refresh, and hybrid/dual model
* Create and manage scalable Power BI dataflows
  + Describe Power BI dataflows and use cases
  + Describe best practices for implementing Power BI dataflows
  + Create and consume Power BI dataflows
* Create paginated reports
  + Get data
  + Create a paginated report
  + Work with charts and tables on the report
  + Publish the report
* Conclusion