

Design and Manage Analytics Solutions Using Power BI

Course PL-300 3-4 days Instructor-led

Introduction

This course covers the various methods and best practices that are in line with business and technical requirements for modeling, visualizing, and analyzing data with Power BI. The course will show how to access and process data from a range of data sources including both relational and non-relational sources. Finally, this course will also discuss how to manage and deploy reports and dashboards for sharing and content distribution.

Audience Profile

The audience for this course are data professionals and business intelligence professionals who want to learn how to accurately perform data analysis using Power BI. This course is also targeted at those individuals who develop reports that visualize data from the data platform technologies that exist on both in the cloud and on-premises.

At Course Completion

After completing this course, students will be able to:

- 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 report assets

Prerequisites

This course assumes the students have the following experience or courses:

- Understanding of core data concepts.
- Knowledge of working with relational data.
- Knowledge of working with non-relational data.
- Knowledge of data analysis and visualization concepts.

Student Materials

Each student receives a printed copy of all the material presented by the instructor.

Course Outline

Module 1: Discover data analysis

- Overview of data analysis
- Roles in data
- Tasks of a data analyst

Module 2: Get started building with Power BI

- Use Power BI
- Building blocks of Power BI
- Tour and use the Power BI service

Module 3: Introduction to end-to-end analytics using Microsoft Fabric

- Explore end-to-end analytics with Microsoft Fabric
- Explore data teams and Microsoft Fabric
- Enable and use Microsoft Fabric
- Module assessment

Module 4: Get started with Copilot in Power BI

- Use Copilot in Power BI to prepare and model data
- Create reports with Copilot in Power BI
- Get your data ready for AI usage in Power BI
- Module assessment

Module 5: Get data in Power BI

- Get data from files
- Get data from relational data sources
- Create dynamic reports with parameters
- Get data from a NoSQL database
- Get data from online services
- Select a storage mode
- Get data from Azure Analysis Services
- Fix performance issues
- Resolve data import errors

Module 6: Clean, transform, and load data in Power BI

- Shape the initial data
- Simplify the data structure
- Evaluate and change column data types
- Combine multiple tables into a single table
- Profile data in Power BI

Contact ISInc for more information at 916.920.1700 or by visiting our website at <http://www.isinc.com>

- Use Advanced Editor to modify M code

Module 7: Choose a Power BI model framework

- Describe Power BI model fundamentals
- Determine when to develop an import model
- Determine when to develop a DirectQuery model
- Determine when to develop a composite model
- Choose a model framework
- Module assessment

Module 8: Configure a semantic model

- Configure relationships
- Configure tables
- Configure columns
- Configure hierarchies
- Configure measures
- Configure parameters

Module 9: Write DAX formulas for semantic models

- Understand DAX calculation types
- Write DAX formulas
- DAX data types
- Work with DAX functions
- Use DAX operators
- Use DAX variables

Module 10: Create DAX calculations in semantic models

- Create calculated tables
- Create calculated columns
- Understand implicit measures
- Create explicit measures
- Use iterator functions

Module 11: Use DAX time intelligence functions in semantic models

- Use DAX time intelligence functions
- Additional time intelligence calculations

Module 12: Create visual calculations in Power BI Desktop

- Understand visual calculations
- Create visual calculations
- Use parameters in visual calculations

Contact ISInc for more information at 916.920.1700 or by visiting our website at <http://www.isinc.com>

- Module assessment

Module 13: Optimize a model for performance in Power BI

- Describe semantic model optimization techniques
- Review performance of measures, relationships, and visuals
- Use variables to improve performance and troubleshooting
- Reduce cardinality
- Optimize DirectQuery models with table level storage
- Create and manage aggregations

Module 14: Scope report design requirements

- Identify the audience
- Determine report types
- Define user interface requirements
- Define user experience requirements
- Explore designs in a Power BI report

Module 15: Design Power BI reports

- Design the analytical report layout
- Design visually appealing reports
- Use report objects
- Select report visuals
- Apply filters and slicers to reports
- Understand filtering techniques and considerations
- Case study - Configure report filters based on feedback

Module 16: Enhance Power BI report designs for the user experience

- Design reports to show details
- Design reports to highlight values
- Design reports that behave like apps
- Work with bookmarks
- Design reports for navigation
- Work with visual headers
- Design reports with built-in assistance
- Tune report performance
- Optimize reports for mobile use

Module 17: Perform analytics in Power BI

- Explore statistical summary
- Identify outliers with Power BI visuals
- Group and bin data for analysis

Contact ISInc for more information at 916.920.1700 or by visiting our website at <http://www.isinc.com>

- Apply clustering techniques
- Conduct time series analysis
- Use the Analyze feature
- Create what-if parameters
- Use specialized visuals

Module 18: Manage workspaces in Power BI service

- Understand Power BI service
- Understand workspaces
- Publish to Power BI service

Module 19: Manage semantic models in Power BI

- Use a Power BI gateway to connect to on-premises data sources
- Configure a semantic model scheduled refresh
- Configure incremental refresh settings
- Manage and promote semantic models
- Boost performance with query caching (Fabric or Premium capacity)
- Use lineage and impact analysis

Module 20: Choose a content distribution method

- Understand sharing models
- Create a Power BI app
- Apply data governance principles
- Track report or dashboard usage

Module 21: Create dashboards in Power BI

- Configure data alerts
- Explore data by asking questions
- Review Quick insights
- Add a dashboard theme
- Pin a live report page to a dashboard
- Set mobile view

Module 22: Secure data access in Power BI

- Configure row-level security with the static method
- Configure row-level security with the dynamic method
- Use single sign-on (SSO) for DirectQuery sources
- Restrict access to Power BI model objects