

Designing and Implementing Enterprise-Scale Analytics Solutions Using Microsoft Azure and Microsoft Power BI

Description

In this course students will build on existing analytics experience and will learn to implement and manage a data analytics environment, query and transform data, implement and manage data models, and explore and visualize data. In this course, students will use Microsoft Purview, Azure Synapse Analytics, and Power BI to build analytics solutions.

Classroom Registration Price (CHF)

3200

Virtual Classroom Registration Price (CHF)

3000

Course Content

Module 1: Explore Azure data services for modern analytics

- Describe the Azure data ecosystem for analytics

Module 2: Understand concepts of data analytics

- Describe types of data analytics
- Understand the data analytics process

Module 3: Explore data analytics at scale

- Explore data job roles in analytics
- Understand tools for scaling analytics solutions

Module 4: Introduction to Microsoft Purview

- Evaluate whether Microsoft Purview is appropriate for data discovery and governance needs
- Describe how the features of Microsoft Purview work to provide data discovery and governance

Module 5: Discover trusted data using Microsoft Purview

- Browse, search, and manage data catalog assets
- Use data catalog assets with Power BI
- Use Microsoft Purview in Azure Synapse

Module 6: Catalog data artifacts by using Microsoft Purview

- Describe asset classification in Microsoft Purview

Module 7: Manage Power BI assets by using Microsoft Purview

- Register and scan a Power BI tenant
- Use the search and browse functions to find data assets
- Describe the schema details and data lineage tracing of Power BI data assets

Module 8: Integrate Microsoft Purview and Azure Synapse Analytics

- Catalog Azure Synapse Analytics database assets in Microsoft Purview
- Configure Microsoft Purview integration in Azure Synapse Analytics
- Search the Microsoft Purview catalog from Synapse Studio
- Track data lineage in Azure Synapse Analytics pipelines activities

Module 9: Introduction to Azure Synapse Analytics

- Identify the business problems that Azure Synapse Analytics addresses
- Describe core capabilities of Azure Synapse Analytics
- Determine when to use Azure Synapse Analytics

Module 10: Use Azure Synapse serverless SQL pool to query files in a data lake

- Identify capabilities and use cases for serverless SQL pools in Azure Synapse Analytics
- Query CSV, JSON, and Parquet files using a serverless SQL pool
- Create external database objects in a serverless SQL pool

Module 11: Analyze data with Apache Spark in Azure Synapse Analytics

- Identify core features and capabilities of Apache Spark
- Configure a Spark pool in Azure Synapse Analytics
- Run code to load, analyze, and visualize data in a Spark notebook

Module 12: Analyze data in a relational data warehouse

- Design a schema for a relational data warehouse
- Create fact, dimension, and staging tables
- Use SQL to load data into data warehouse tables
- Use SQL to query relational data warehouse tables

Module 13: 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 an appropriate Power BI model framework

Module 14: Understand scalability in Power BI

- Describe the importance of building scalable data models
- Implement Power BI data modeling best practices
- Use the Power BI large dataset storage format

Module 15: 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

Module 16: Create Power BI model relationships

- Understand how model relationship work
- Set up relationships
- Use DAX relationship functions
- Understand relationship evaluation

Module 17: Use DAX time intelligence functions in Power BI Desktop models

- Define time intelligence
- Use common DAX time intelligence functions
- Create useful intelligence calculations

Module 18: Create calculation groups

- Explore how calculation groups work
- Maintain calculation groups in a model
- Use calculation groups in a Power BI report

Module 19: Enforce Power BI model security

- Restrict access to Power BI model data with RLS.
- Restrict access to Power BI model objects with OLS.
- Apply good development practices to enforce Power BI model security

Module 20: Use tools to optimize Power BI performance

- Optimize queries using performance analyzer
- Troubleshoot DAX performance using DAX Studio
- Optimize a data model using Tabular Editor

Module 21: Understand advanced data visualization concepts

- Create and import a custom report theme
- Create custom visuals with R or Python
- Enable personalized visuals in a report
- Review report performance using Performance Analyzer
- Design and configure Power BI reports for accessibility

Module 22: Monitor data in real-time with Power BI

- Describe Power BI real-time analytics
- Set up automatic page refresh
- Create real-time dashboards
- Set up auto-refresh paginated reports

Module 23: Create paginated reports

- Get data
- Create a paginated report
- Work with charts and tables on the report

- Publish the report

Module 24: Provide governance in a Power BI environment

- Define the key components of an effective BI governance model
- Describe the key elements associated with data governance
- Configure, deploy, and manage elements of a BI governance strategy
- Set up BI help and support settings

Module 25: Facilitate collaboration and sharing in Power BI

- Understand the differences between My workspace, workspaces, and apps
- Describe new workspace capabilities and how they improve the user experience
- Anticipate migration impact to Power BI users
- Share, publish to the web, embed links and secure Power BI reports, dashboards, and content

Module 26: Monitor and audit usage

- Discover what usage metrics are available through the Power BI admin portal
- Optimize use of usage metrics for dashboards and reports
- Distinguish between audit logs and the activity logs

Module 27: Provision Premium capacity in Power BI

- Describe the difference between Power BI Pro and Power BI Premium
- Define dataset eviction
- Explain how Power BI manages memory resources
- List three external tools you can use with Power BI Premium

Module 28: Establish a data access infrastructure in Power BI

- Understand the difference between gateways, the various connectivity modes, and data refresh methods
- Describe the gateway network requirements, where to place the gateway in your network, and how to use clustering to ensure high availability
- Scale, monitor, and manage gateway performance and users

Module 29: Broaden the reach of Power BI

- Describe the various embedding scenarios that allow you to broaden the reach of Power BI
- Understand the options for developers to customize Power BI solutions
- Learn to provision and optimize Power BI embedded capacity and create and deploy dataflows
- Build custom Power BI solutions template apps

Module 30: Automate Power BI administration

- Use REST APIs to automate common Power BI admin tasks
- Apply Power BI Cmdlets for Windows PowerShell and PowerShell core
- Use Power BI Cmdlets
- Automate common Power BI admin tasks with scripting

Module 31: Build reports using Power BI within Azure Synapse Analytics

- Describe the Power BI and Synapse workspace integration
- Understand Power BI data sources

- Describe optimization options
- Visualize data with serverless SQL pools

Module 32: Design a Power BI application lifecycle management strategy

- Outline the application lifecycle process
- Choose a source control strategy
- Design a deployment strategy

Module 33: Create and manage a Power BI deployment pipeline

- Articulate the benefits of deployment pipelines
- Create a deployment pipeline using Premium workspaces
- Assign and deploy content to pipeline stages
- Describe the purpose of deployment rules
- Deploy content from one pipeline stage to another

Module 34: Create and manage Power BI assets

- Create specialized datasets
- Create live and DirectQuery connections
- Use Power BI service lineage view
- Use XMLA endpoint to connect datasets

Lab / Exercises

- Official Microsoft Labs

Documentation

- Access to Microsoft Learn (online learning content)

Exam

- This course prepares you to the **DP-500: Designing and Implementing Enterprise-Scale Analytics Solutions Using Microsoft Azure and Microsoft Power BI** exam
- If you wish to take this exam, please select it when you add the course to your basket

Participant profiles

- Solution architects
- Data engineers
- Data scientists
- AI engineers
- Database administrators
- Power BI data analysts

Prerequisites

- A foundational knowledge of core data concepts and how they're implemented using Azure data services
- Experience designing and building scalable data models, cleaning and transforming data, and enabling advanced analytic capabilities that provide meaningful business value using Microsoft Power BI

Objectives

- Implement and manage a data analytics environment
- Query and transform data
- Implement and manage data models
- Explore and visualise data

Niveau

Intermédiaire

Duration (in Days)

4

Reference

DP-500T00