

**Microsoft Fabric Analytics Engineer (DP-600)**

**Course Number:** MOC-DP-600  
**Duration:** 4 days

**Overview**

This Microsoft Fabric Analytics Engineer training (Microsoft course DP-600) teaches attendees the methods and practices for implementing and managing enterprise-scale data analytics solutions using Microsoft Fabric. Students learn how to use Microsoft Fabric components, including lakehouses, data warehouses, notebooks, dataflows, data pipelines, and semantic models, to create and deploy analytics assets.

**Prerequisites**

Attendees should have achieved [PL-300 certification](https://learn.microsoft.com/en-us/credentials/certifications/exams/pl-300/) or have similar experience using Power BI for data transformation, modeling, visualization, and sharing. Also, learners should have experience building and deploying data analytics solutions at the enterprise level.

**Materials**

All Microsoft training students receive Microsoft official courseware.

For all Microsoft Official Courses taught in their entirety that have a corresponding certification exam, an exam voucher is included for each participant.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computers for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will work well.

**Objectives**

* Describe end-to-end analytics in Microsoft Fabric
* Describe Fabric admin tasks
* Navigate the admin center
* Manage user access
* Describe Dataflow capabilities in Microsoft Fabric
* Create Dataflow solutions to ingest and transform data
* Include a Dataflow in a pipeline
* Ingest external data to Fabric lakehouses using Spark
* Configure external source authentication and optimization
* Load data into lakehouse as files or as Delta tables
* Describe pipeline capabilities in Microsoft Fabric
* Use the Copy Data activity in a pipeline
* Create pipelines based on predefined templates
* Run and monitor pipelines
* Describe core features and capabilities of lakehouses in Microsoft Fabric
* Create a lakehouse
* Ingest data into files and tables in a lakehouse
* Query lakehouse tables with SQL
* Describe the principles of using the medallion architecture in data management
* Apply the medallion architecture framework within the Microsoft Fabric environment
* Analyze data stored in the lakehouse using DirectLake in Power BI
* Describe best practices for ensuring the security and governance of data stored in the medallion architecture
* Configure Spark in a Microsoft Fabric workspace
* Identify suitable scenarios for Spark notebooks and Spark jobs
* Use Spark dataframes to analyze and transform data
* Use Spark SQL to query data in tables and views
* Visualize data in a Spark notebook
* Understand Delta Lake and delta tables in Microsoft Fabric
* Create and manage delta tables using Spark
* Use Spark to query and transform data in delta tables
* Use delta tables with Spark structured streaming
* Learn different strategies to load data into a data warehouse in Microsoft Fabric
* Learn how to build a data pipeline to load a warehouse in Microsoft Fabric
* Learn how to load data in a warehouse using T-SQL
* Learn how to load and transform data with dataflow (Gen 2)
* Use SQL query editor to query a data warehouse.
* Explore how visual query editor works.
* Learn how to connect and query a data warehouse using SQL Server Management Studio
* Monitor capacity unit usage with the Microsoft Fabric Capacity Metrics app
* Monitor current activity in the data warehouse with dynamic management views
* Monitor querying trends with query insights views
* Describe the importance of building scalable data models
* Implement Power BI data modeling best practices
* Use the Power BI large dataset storage format
* Understand how model relationships work
* Set up relationships
* Use DAX relationship functions
* Understand relationship evaluation
* Optimize queries using a performance analyzer
* Troubleshoot DAX performance using DAX Studio
* Optimize a data model using Tabular Editor

**Outline**

* Introduction to end-to-end analytics using Microsoft Fabric
  + Explore end-to-end analytics with Microsoft Fabric
  + Data teams and Microsoft Fabric
  + Enable and use Microsoft Fabric
* Administer Microsoft Fabric
  + Understand the Fabric Architecture
  + Understand the Fabric administrator role
  + Manage Fabric security
  + Govern data in Fabric
* Ingest data with Dataflows Gen2 in Microsoft Fabric
  + Understand Dataflows Gen2 in Microsoft Fabric
  + Explore Dataflows Gen2 in Microsoft Fabric
  + Integrate Dataflows Gen2 and Pipelines in Microsoft Fabric
* Ingest data with Spark and Microsoft Fabric notebooks
  + Connect to data with Spark
  + Write data into a lakehouse
  + Consider uses for ingested data
* Use data factory pipelines in Microsoft Fabric
  + Understand pipelines
  + Use the Copy Data activity
  + Use pipeline templates
  + Run and monitor pipelines
* Get started with lakehouses in Microsoft Fabric
  + Explore the Microsoft Fabric lakehouse
  + Work with Microsoft Fabric lakehouses
  + Explore and transform data in a lakehouse
* Organize a Fabric lakehouse using medallion architecture design
  + Describe medallion architecture
  + Implement a medallion architecture in Fabric
  + Query and report on data in your Fabric lakehouse
  + Considerations for managing your lakehouse
* Use Apache Spark in Microsoft Fabric
  + Prepare to use Apache Spark
  + Run Spark code
  + Work with data in a Spark dataframe
  + Work with data using Spark SQL
  + Visualize data in a Spark notebook
* Work with Delta Lake tables in Microsoft Fabric
  + Understand Delta Lake
  + Create delta tables
  + Work with delta tables in Spark
  + Use delta tables with streaming data
* Get started with data warehouses in Microsoft Fabric
  + Understand data warehouse fundamentals
  + Understand data warehouses in Fabric
  + Query and transform data
  + Prepare data for analysis and reporting
  + Secure and monitor your data warehouse
* Load data into a Microsoft Fabric data warehouse
  + Explore data load strategies
  + Use data pipelines to load a warehouse
  + Load data using T-SQL
  + Load and transform data with Dataflow Gen2
* Query a data warehouse in Microsoft Fabric
  + Use the SQL query editor
  + Explore the visual query editor
  + Use client tools to query a warehouse
* Monitor a Microsoft Fabric data warehouse
  + Monitor capacity metrics
  + Monitor current activity
  + Monitor queries
* Understand scalability in Power BI
  + Describe the significance of scalable models
  + Implement Power BI data modeling best practices
  + Configure large datasets
* Create Power BI model relationships
  + Understand model relationships
  + Set up relationships
  + Use DAX relationship functions
  + Understand relationship evaluation
* Use tools to optimize Power BI performance
  + Use Performance analyzer
  + Troubleshoot DAX performance by using DAX Studio
  + Optimize a data model by using Best Practice Analyzer
* Enforce Power BI model security
  + Restrict access to Power BI model data
  + Restrict access to Power BI model objects
  + Apply good modeling practices