Implement Analytics Solutions Using Microsoft Fabric (DP-600) Training

Duration: **4 Day**

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Overview

This four-day instructor-led course provides data professionals with the knowledge and practical skills required to design, implement, manage and optimise analytics solutions using Microsoft Fabric. Aligned with the Microsoft DP-600 curriculum, the course equips learners with the expertise needed to build scalable, secure and high-performing analytics solutions that support enterprise reporting and business intelligence.

Through a combination of instructor-led learning and hands-on labs, learners explore analytics data stores, data transformation, semantic modelling, AI-ready analytics data, governance and security using Microsoft Fabric. Successful completion of the course prepares participants for the Microsoft Certified: Fabric Analytics Engineer Associate (DP-600) certification examination.

Prerequisites

Participants should have:

- Core analytics knowledge – Understanding of basic data analysis concepts and the end-to-end data lifecycle, including ingestion, transformation, storage, and visualisation.
- Database and query skills – Experience working with relational databases, including writing SQL queries and understanding schemas, tables, joins, and relationships.
- ETL and data integration – Familiarity with extract, transform, and load processes and how data is moved across systems.
- Cloud and data platform awareness – Basic knowledge of cloud-based data platforms, ideally Microsoft Azure, including data lakes and data warehouses.
- Power BI fundamentals – Experience creating reports and dashboards in Power BI, including measures, calculated columns, and data relationships.
- Programming and data languages – Exposure to programming concepts such as Python or R, and analytical languages such as DAX. Familiarity with Apache Spark concepts is beneficial.
- Security basics – Awareness of data security principles, including row-level security and access control mechanisms.
- Business understanding – Ability to interpret business requirements and translate them into analytics solutions.

Target audience

This course is designed for:

- Analytics engineers working with Microsoft Fabric.
- Data engineers responsible for enterprise analytics solutions.
- Business intelligence professionals.
- Data analysts looking to expand their Microsoft Fabric expertise.
- Professionals preparing for the Microsoft Certified: Fabric Analytics Engineer Associate (DP-600) certification.

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What You Will Learn

By the end of this course, learners will be able to:

- Design and implement analytics solutions using Microsoft Fabric.
- Explore and manage analytics data stores including Lakehouses, Warehouses and Eventhouses.
- Transform and prepare analytics data using Microsoft Fabric tools and services.
- Develop and manage semantic models for enterprise analytics and reporting.
- Prepare AI-ready analytics data that supports advanced analytical workloads and Copilot experiences.
- Implement security, governance and compliance controls across Microsoft Fabric workloads.
- Prepare confidently for the Microsoft Certified: Fabric Analytics Engineer Associate (DP-600) certification examination.

Outline

Module 1 - Explore end-to-end analytics with Microsoft Fabric

- Explain what Microsoft Fabric is and why it unifies analytics workloads
- Identify Fabric workloads and map them to common data roles
- Describe how OneLake enables AI-powered analytics

Module 2 - Discover and connect to data in OneLake

- Explain how OneLake provides unified storage across Microsoft Fabric
- Browse and discover data using the OneLake catalog
- Create shortcuts to connect to data without duplication
- Discover streaming data in Real-Time hub
- Exercise: Discover data in OneLake

Module 3 - Get started with lakehouses in Microsoft Fabric

- Describe the core features and capabilities of lakehouses
- Create a lakehouse and ingest data
- Query lakehouse data using SQL and Spark
- Connect Power BI to lakehouse data with Direct Lake
- Exercise: Create and query a lakehouse

Module 4 - Get started with data warehouses in Microsoft Fabric

- Describe data warehouse concepts and dimensional modelling fundamentals
- Create tables and load data into a Fabric warehouse
- Query and transform data using T-SQL and the visual query editor
- Model warehouse data for reporting and downstream consumption
- Exercise: Analyse data in a warehouse

Module 5 - Get started with Real-Time Intelligence in Microsoft Fabric

- Describe real-time analytics, events, and streams
- Explain how Real-Time Intelligence components work together
- Write Kusto Query Language queries to select, filter, and aggregate streaming data

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- Explain how Real-Time dashboards and activator complete the real-time analytics cycle
- Exercise: Get started with Real-Time Intelligence

Module 6 - Choose data stores in Microsoft Fabric

- Identify common analytics workloads and the most suitable data store for each
- Compare lakehouse, warehouse, and eventhouse options
- Recommend the appropriate data store for specific business scenarios

Module 7 - Design dimensional models for analytics in Microsoft Fabric

- Explain how dimensional models support the curated analytics layer
- Design fact tables with appropriate grain and measures
- Design dimension tables using surrogate keys and denormalised attributes
- Select slowly changing dimension patterns for evolving data
- Exercise: Design and implement a star schema

Module 8 - Transform data using Dataflows Gen2 in Microsoft Fabric

- Explain when Dataflows Gen2 should be used instead of code-based approaches
- Apply transformations and configure output destinations
- Optimise performance using query folding
- Exercise: Transform data with Dataflows Gen2

Module 9 - Transform data using notebooks in Microsoft Fabric

- Describe Fabric notebooks and Spark-based processing
- Transform data using PySpark and Spark SQL
- Write and optimise Delta tables for analytics workloads
- Exercise: Transform data with notebooks

Module 10 - Transform data using T-SQL in Microsoft Fabric

- Explain the differences between T-SQL and Spark SQL workloads
- Create reusable objects for business logic and automated loading
- Implement loading patterns for dimensional models
- Exercise: Transform data with T-SQL

Module 11 - Create DAX calculations in semantic models

- Differentiate calculated tables, calculated columns, and measures
- Explain row context and filter context
- Create measures using advanced DAX patterns and iterator functions
- Exercise: Create DAX calculations

Module 12 - Design semantic models for scale in Microsoft Fabric

- Select storage modes based on performance and data freshness requirements
- Design efficient star schema relationships
- Create scalable calculation patterns
- Configure settings for enterprise-scale consumption
- Exercise: Design a semantic model for scale

Module 13 - Optimise semantic model performance

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- Use Performance Analyzer to identify bottlenecks
- Optimise DAX calculations
- Reduce cardinality to improve efficiency
- Implement aggregations for large datasets
- Exercise: Diagnose and fix a slow report

Module 14 - Enforce semantic model security

- Implement row-level security using static and dynamic DAX filters
- Apply object-level security to tables and columns
- Test security configurations and manage role membership
- Explain how security affects AI-enabled consumption scenarios
- Exercise: Implement row-level security for a semantic model

Module 15 - Manage the semantic model development lifecycle

- Create reusable Power BI assets for consistency
- Version control semantic models using Power BI Project files and Git
- Validate models programmatically using SemPy
- Deploy through pipelines and monitor refresh operations
- Exercise: Validate and deploy a semantic model

Module 16 - Prepare the semantic layer for AI

- Explain how AI tools consume semantic model metadata through grounding
- Design AI-ready gold layers and naming conventions
- Configure Prep for AI features, including schema, verified answers, and instructions
- Describe how semantic models connect to enterprise ontology within Fabric IQ
- Exercise: Prepare a semantic model for AI

Module 17 - Create an ontology with Fabric IQ

- Explain the purpose of an ontology and how it differs from a semantic model
- Identify entity types, properties, keys, and relationships
- Generate an ontology from a Power BI semantic model
- Connect ontology definitions to data sources and preview results
- Exercise: Build an ontology from a semantic model

Module 18 - Secure data access in Microsoft Fabric

- Describe the multi-layer security model in Microsoft Fabric
- Configure workspace roles and item permissions using least-privilege principles
- Apply granular T-SQL security to lakehouse and warehouse data
- Create OneLake data access roles for folder-level role-based access control
- Exercise: Secure data access in Microsoft Fabric

Module 19 - Govern analytics data in Microsoft Fabric

- Apply sensitivity labels and understand lineage propagation
- Use endorsement and documentation features to improve trust and discoverability
- Describe how governance signals influence AI readiness and behaviour
- Exercise: Govern analytics data

Exams and assessments

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This course prepares learners for the Microsoft Certified: Fabric Analytics Engineer Associate (DP-600) certification examination. Throughout the course, learners complete practical labs and guided exercises that reinforce the skills required to design, implement, manage and secure analytics solutions using Microsoft Fabric. The exam is not included but is available seaprately.

Hands-on learning

This course includes:

- Practical Microsoft Fabric analytics labs.
- Hands-on exercises using Lakehouses, Warehouses and Eventhouses.
- Guided activities covering data transformation, semantic modelling and analytics data preparation.
- Practical exercises using Dataflows Gen2, notebooks and Microsoft Fabric analytics tools.
- Real-world analytics engineering scenarios.
- Instructor-led demonstrations and practical workshops.