

Power BI: Data Transformation and Modeling - TTDPB03

Build cleaner, smarter Power BI models with better queries, relationships, and DAX for faster, more reliable insights and reporting.

Duration: 2 Days

Skill Level: Intermediate

Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended;
On Public Schedule

Transform raw data into clean, structured, and high-performing models that drive better insights and decision-making. This hands-on, expert-led course teaches you how to manage queries, fix data issues, and create a robust semantic model in Power BI. Learn practical techniques for organizing data, optimizing relationships, and writing efficient DAX calculations while ensuring security and performance. Whether you work with financial reports, operational data, or business intelligence projects, you will gain the skills to build flexible, reliable datasets that make analysis easier and more impactful.

What You'll Learn

Overview

Take your Power BI skills to the next level with **Power BI: Data Transformation and Modeling**, an engaging, hands-on course designed for professionals who already know the basics and want to refine their expertise. Throughout the course you will learn gain the tools and techniques to handle real-world challenges like optimizing data quality, creating scalable queries, and building high-performing semantic models. This course focuses on practical applications, ensuring you can confidently retrieve and connect data from various sources, address data quality issues, and manipulate queries with advanced techniques. You'll also explore best practices for creating and maintaining

star schemas, writing efficient DAX measures, and implementing row-level security to enhance data governance.

Through a mix of expert-led instruction and hands-on activities, you'll not only expand your technical skills but also learn strategies to make your reports more reliable, insightful, and secure. Whether you're fine-tuning relationships, improving report performance, or setting up parameters and incremental refresh, this course equips you with techniques you can immediately apply in your role. By the end of the course, you'll be ready to build Power BI reports and models that align with best practices and deliver impactful results for your organization.

Objectives

This course combines engaging instructor-led presentations and useful demonstrations with valuable hands-on labs and engaging group activities. Throughout the course you'll learn how to:

- Identify and retrieve data from various data sources and understand the different connection methods.
- Connect and change connections to a variety of data sources
- Identify problems with data quality and errors and address them
- Leverage Applied Steps and the Advanced Editor
- Manipulate queries to create additional queries or modify existing queries
- Future proof queries
- Create parameters and functions
- Set up for incremental refresh
- Create a star schema that meets best practice standards
- Write DAX measures with a variety of DAX functions, including CALCULATE
- Use variables and nested expressions to streamline DAX measures
- Activate inactive relationships
- Avoid many-to-many relationships
- Set up incremental refresh in the model
- Measure the performance of a report page
- Use the DAX query view to view and improve the performance of DAX expressions
- Create security roles and assign row level security through the role

If your team requires different topics, additional skills or a custom approach, our team will collaborate with you to adjust the course to focus on your specific learning objectives and goals.

Audience

This course is geared for data analysts, business intelligence professionals, and power users who are already familiar with Power BI basics but want to sharpen their skills and become more effective in their roles. Whether you're designing dashboards, creating data models, or improving reporting accuracy, this class provides the tools you need to succeed.

Suggested Learning Paths:

Business User/Report Developer

1. **TTDPB01: Power BI: Essentials (2 days)**. Foundation for all learners.
2. **TTDPB04: Power BI: Creating Reports (1 day)**. Learn to design and build insightful reports.
3. *(Optional)* **TTDPB03: Power BI: Data Transformation & Modeling (2 days)**. If you need to clean and prepare data before reporting.

For Data Analysts & Power Users (*Focus: Data Preparation, Analysis, and Advanced Calculations*)

1. **TTDPB01: Power BI: Essentials (2 days)**. Foundation for all learners.
2. **TTDPB03: Power BI: Data Transformation & Modeling (2 days)**. Learn Power Query and data modeling best practices.
3. **TTDPB05: Power BI: Mastering DAX for Data Analysis (1 day)**. Essential for writing complex calculations and optimizing analysis.
4. *(Optional)* **TTDPB04: Power BI: Creating Reports (1 day)**. If they also need to design and present reports.

For Data Engineers (*Focus: Data Preparation & Optimization*)

1. **TTDPB01: Power BI: Essentials (2 days)**. Foundation for all learners.
2. **TTDPB03: Power BI: Data Transformation & Modeling (2 days)**. Core course for data cleaning and model structuring.
3. *(Optional)* **TTDPB05: Power BI: Mastering DAX for Data Analysis (1 day)**. If you need to optimize performance with calculated measures.

Pre-Requisites

To ensure a smooth learning experience and to gain the most from attending this course, you should have:

- Basic familiarity with Power BI tools and interface.
- A working knowledge of importing and visualizing data.
- General understanding of database concepts and relationships.

Take Before: In order to gain the most from this course, you should have incoming skills equivalent to those in the course listed below, or should have attended this as a prerequisite:

TTDPB01 Power BI Essentials

Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.

1. Getting the Data

- Entering Your Credentials
- Change Data Source Settings
- Changing Data Source Settings
- When a data source moves
- Editing Permissions
- Clear Permissions
- Privacy Levels
- Writing your own SQL code
- Shared vs. local dataset
- Using Folders and SharePoint Folders

2. Data Quality and Data Typing

- Turning on the profiling tools
- Data quality and distribution
- Profiling on more than 1000 rows
- Empty fields: handling blanks and nulls
- Cardinality: what is it and why is it important?
- Keys and IDs

- Handling errors
- Data Types

3. Applied Steps

- The "magic" of steps: adding, deleting, re-arranging steps
- Naming and Documenting Steps
- Query Folding and Changed Type step
- Using The Advanced Editor

4. When the existing data is not enough (or too much)

- Replacing data
- Adding new data
- Adding a new column
- Adding a new query
- Deleting columns and rows

5. Manipulating Queries

- Combining queries
- Append, Merge
- Duplicating a query
- Referencing a query
- "Helper" queries
- Deleting a query
- Copying parts of an M script

6. Future Proofing Queries

- Resolving errors in your query
- Read the Formula Bar
- Re-using your work in other queries
- Copying queries into new PBIX files

7. Parameters and Functions

- What is a parameter?
- When do you need one?
- Why parameters are useful
- Creating a parameter
- What is a function?
- When do you need one?
- Why functions are necessary

- Creating a function
- What is a Semantic Model?
- Review the fields and tables that have been imported into the Power BI Desktop.
- Why is a data model necessary?
- Explain the star schema
- Discuss fact and dimension tables
- Recognizing typical errors when the model is incorrect

8. Filters and Relationships

- Explore the types of relationships: 1-to-many/many-to-1, many-to-many, one-to-one
- Discuss the importance of filtering in Power BI
- Creating relationships
- Active and inactive relationships
- Using CALCULATE to modify the model's behavior or change the filter context

9. Adding to the Semantic Model

- Adding new content using DAX: tables, columns, measures
- Hiding fields
- Finishing touches: hierarchies, descriptions, display folders
- Evaluate report performance and identify solutions Use different functions to accomplish the same end; evaluate performance
- Measure individual measure performance using DAX Query view
- In depth discussion of filter and row context in DAX

10. Row-level Security

- Security overview in Power BI
- Row-level security
- Static Method
- Dynamic Method

Related Courses

TTDPB05	Power BI: Mastering DAX for Data Analysis
TTDPB03	Power BI: Data Transformation and Modeling
TTDPB04	Power BI: Creating Reports
TTDPB01	Power BI Essentials

Setup Made Simple! All of our Power BI course software, digital course files or course notes, labs, data sets and solutions, live coaching support channels and rich extended learning and post training resources are provided for you in our **easy access, single source, no install required** online **Learning Experience Platform (LXP)**, remote lab and content environment. Or we can provide a local installation (trial edition) to setup and use on your machine. Access periods and versions vary by course. Please inquire about set up details and options for your specific course of interest.

Regardless of setup option, we will collaborate with you to ensure your team is set up and ready to go well in advance of the class.

For More Information

Please [contact us](#) or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.