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Learning Style: Virtual Classroom

Technology:

Difficulty: Intermediate

Course Duration: 2 Days

Next Course Date: May 20, 2026

Power BI: Data Transformation & Modeling (TTDPB03)

About This Course:

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.

Course Objectives:

- 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

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.

Prerequisites:

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

Course Outline:

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