MERCURY

Advanced Power BI: DAX, Data Modeling and Time Intelligence

6 – 10 September 2027
Paris (France)



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Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

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Advanced Power BI: DAX, Data Modeling and Time Intelligence

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Advanced Power BI with DAX, data modeling and time intelligence is the step after building your first reports: star-schema models, measures that respect filter context, period comparisons and reports that stay fast. This 1-week course is for analysts and report builders who already publish Power BI reports, and you leave with an Advanced Power BI Model Pack. This advanced Power BI course is delivered by Mercury Training Center.

About This Course

Many Power BI reports work until someone asks for last year's comparison, a rolling average or a faster page. You should already connect data, build visuals and publish reports. You practice each technique on prepared retail and operations datasets, then apply it to a model from your own work.

Who It Is For

- Analysts who maintain Power BI reports used by managers.
- Finance and performance staff who produce monthly and year-to-date figures.
- Data and IT staff who own shared datasets, refresh schedules and workspaces.
- Sales and marketing analysts who track targets, growth and customer trends.
- Project and operations staff who turn system extracts into performance dashboards.

This course is not for people who have not yet built a Power BI report, who should start with an introductory analysis and visualization course, nor for data engineers designing enterprise data warehouses, who suit a database or data platform course.

Competencies You Will Build

- Dimensional Model Design: you shape flat extracts into fact and dimension tables that filter correctly.
- DAX Measure Writing: you write measures that return the right figure under any slicer or filter.
- Time Intelligence: you produce year-to-date, prior period and rolling figures from one date table.
- Dynamic Report Design: you build pages where users switch measures and drill to detail themselves.
- Performance Tuning: you find the slow visual or measure and fix it.
- Content Deployment: you publish, share and refresh content through workspaces and apps.

What You Will Be Able to Do

By the end of the course you will be able to:

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- From a single flat sales extract, build a star schema with correct relationships and hierarchies.
- Given a business ratio request, write a CALCULATE measure and test it under different filters.
- Using a marked date table, create prior period, growth and rolling average measures for a monthly review.
- Given a slow report page, read Performance Analyzer results and cut the load time.
- Using field parameters and bookmarks, give report users their own choice of measure and view.
- From a finished model, publish an app with scheduled refresh and alerts for its audience.

Course Content

Day 1: Model Foundations and Power Query Review

- Power BI Desktop, Service and Mobile Roles in an Existing Reporting Setup
- Power Query Connections to Excel, SQL Server and Web Sources With Clean Shaping
- Data Types and Import Settings for Reliable Refresh
- Star Schema Design With Fact and Dimension Tables for a Sales Model
- Relationships, Cardinality, Filter Direction and Hierarchies

Day 2: DAX Measures and Evaluation Context

- Calculated Columns Versus Measures for Model Size and Speed
- Row Context, Filter Context and Context Transition in DAX
- CALCULATE and Filter Modifiers for Business Ratios
- SUMX and AVERAGEX Iterators for Weighted Results
- Variables and Readable DAX Patterns for a Shared Measure Library

Day 3: Time Intelligence and Trend Analysis

- Date Table Design and Marking for Time Intelligence
- Year-to-Date, Prior Period and Rolling Average Measures
- Growth and Variance Measures for Monthly Performance Reviews
- Forecasting and Clustering Visuals for Trend and Pattern Analysis
- Statistical Measures for Outlier Checks in Operational Data

Day 4: Dynamic Reporting and Performance Tuning

- Dynamic Titles and Field Parameters for User-Selected Measures
- Drill-Through, Slicers, Bookmarks and Themes for Guided Reports
- Performance Analyzer and DAX Query Review for Slow Visuals
- Model Size Reduction and Storage Mode Choices
- Data Storytelling Layouts for Executive and Operational Audiences

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Day 5: Model Build Practice and Deployment

- Exercise: Rebuilding a Flat Extract Into a Star Schema Model
- Exercise: Writing and Testing a Time Intelligence Measure Set
- Exercise: Tuning a Slow Report With Performance Analyzer
- Workspaces, Apps, Embedding, Scheduled Refresh and Alerts in the Power BI Service
- Completing the Advanced Power BI Model Pack for Your Own Data

Case Studies and Exercises

These are suggested activities.

- Case study: a retail chain's sales report shows wrong totals when filtered by region; you redesign the relationships and fix the measures.
- Case study: a hospital operations dashboard needs month-on-month and rolling admission figures; you build the time intelligence measures.
- Exercise: a manufacturing quality report takes too long to open; you diagnose the slow visuals and tune the model.
- Exercise: a utilities finance team wants one page that switches between cost, volume and margin; you build it with field parameters.

What You Take Back

You return with the Advanced Power BI Model Pack, built on your own data. In your first month back, use it to restructure one existing report onto the star schema, replace its hand-built comparisons with the time intelligence measures and check its pages with Performance Analyzer.

- Star schema model with documented relationships and hierarchies.
- Measure library covering base, ratio and time intelligence measures.
- Dynamic report pages with field parameters and drill-through.
- Performance checklist and refresh and sharing settings.

Quick Answers FAQ

What should I know before advanced Power BI and DAX training?

You should already connect data in Power Query, build visuals and publish reports to the Power BI Service. Basic measures such as SUM and COUNT should be familiar.

How does advanced Power BI differ from an introductory Power BI course?

An introductory course teaches importing data, building visuals and publishing a first report. The advanced level assumes those skills and spends the time on star-schema modeling, evaluation context in DAX, time intelligence, dynamic pages and performance tuning.

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Why do DAX measures return wrong totals in Power BI?

Wrong totals usually come from a flat or badly related model, or from a measure that ignores filter context. Fixing the relationships and rewriting the measure with CALCULATE or an iterator such as SUMX normally corrects it.

What do I take back from advanced Power BI data modeling training?

You take back the Advanced Power BI Model Pack: a star schema model, a tested measure library with time intelligence, dynamic report pages and a performance checklist, built on your own data.

For Your Manager

After the course, the team member can restructure reports onto a star schema, write reliable DAX measures, produce period comparisons from one date table and speed up slow reports. They return with an Advanced Power BI Model Pack built on your data, first used to rebuild one of the team's most used monthly reports.