



THE UNIVERSITY OF
SYDNEY

Power BI Course: Advanced

*Centre for
Continuing Education*

Power BI Course: Advanced



This advanced Power BI course will develop your data modelling skills, widening the scope of your business intelligence processes and enabling you to extract more valuable data from your reports and dashboards.

While connecting to and importing from multiple sources simultaneously, we will overcome relational database obstacles and aggregate tables using a variety of advanced data modelling techniques and analysis expressions.

You will also expand your time-intelligence and relationship function vocabulary to refine your DAX routines, resulting in improved efficiency of your queries. Finally – when working with large datasets, it is important that your data connections and query scripts do not burden your computer's resources. We will show you methods and tools to reduce memory and CPU consumption and optimise your Power BI models.

Intended audience

Anyone interested in data modelling and visualisation.



Course duration

1 session, 8 hours total



Time

9am - 5pm



Format

Face-to-face
or
Online in real-time



Dates

Browse available
[course dates](#)

Prerequisites

It is recommended that you are comfortable with the learning outcomes equivalent to [Power BI Course: Intermediate](#), and of [Microsoft Excel Course: Level 2](#). In particular, the use of Tables.



Upon completion

Every participant receives a University of Sydney statement of completion.



Aims

We want to expand the capability of your Power BI reports by equipping you with the knowledge and skills to connect and model your tables with the most efficient and flexible queries, while optimising resource consumption. You will also learn to implement data analysis expressions that create and filter table relationships and build period calculations using time-intelligence functions.



Learning outcomes

By the end of this course, you should be able to:

- identify and implement the best connection/storage mode for your data sources
- connect to multiple data sources, including cloud servers in a composite model
- model many-to-many relationships and bidirectional filters
- create aggregated tables
- create custom hierarchies
- create physical and virtual relationships
- use a variety of DAX functions to look up and filter tables
- build and compare time-intelligent DAX functions
- improve DAX measures with efficient functions and declared variables
- optimise performance with query folding and custom program settings
- manage data variations using fuzzy matching
- apply row level security to manage access to data based on roles.





Content

Overview and management of Composite Models

- Data Models in Power BI
- DirectQuery with Microsoft Azure SQL Server Tables
- Manage a model with SQL Table and SharePoint Table Relationships
- Connect live to existing Power BI dataset

Advanced Data Modelling

- Duplicate Queries vs Reference Queries
- Create Aggregate Tables with Power Query
- Best Practice to Balance Table Storage Modes
- Bridge Many-to-Many Relationships

Model Relationships with DAX

- Improve DAX Efficiency Declaring Variables Using VAR
- Physical and Virtual Relationships
- USERELATIONSHIP
- LOOKUPVALUE
- FILTER
- MAX and MIN
- INTERSECT, TREATAS, EXCEPT, UNION, including compare Power Query Merge and Left Anti-Join

Advanced DAX Time Intelligence Functions

- Use Dual Mode with SQL Date Table
- DAX for time intelligence, including measures following inactive relationships
- PREVIOUSMONTH, PREVIOUSYEAR

- NEXTMONTH, NEXTYEAR
- DATESINPERIOD, DATESQTD, DATESYTD
- LASTDATE
- SAMEPERIODLASTYEAR, PARALLELPERIOD

Program and file optimisation

- Disable intermediate queries
- Optimise Column Data Types
- Error Handling in Power Query
- Performance Analyzer
- Leverage Query Folding

Fuzzy Matching

- Fuzzy vs. Normal Matching
- Sample Datasets
- Data Model vs. Merge Queries
- Cross-filter direction
- Merge Queries
- Default Fuzzy Matching
- Fuzzy Matching fine tuning
- Similarity Threshold
- Match by combining text parts
- Fuzzy Matching recommendations

Row Level Security

- Manage Roles
- View as a selected role
- Security settings of Power BI Online
- Power BI Desktop
- Power BI Online



“Clear explanations and easy to follow instructions. The facilitator takes the time answer my questions and explains the reasoning why where appropriate.”

Michael Beluso



“Fabulous course pace and content, I learned many new tips and tricks and plugged gaps in my knowledge as a regular Power BI user. Very grateful for time taken to provide further explanations where needed and case / data type specific tips. The small class size encouraged active participation and allowed space for everyone's technical differences to be resolved, and everyone's questions to be answered.”

Vanessa Kay



“Well paced program and it reinforced work I'm already doing and provided me with new information. Highly recommended.”

Krystie Harris



Materials

A course workbook and exercise files are distributed electronically.



Organisational training and development

This course can be delivered as a private session for groups, and tailored to meet the needs of your business. Contact us to discuss our range of organisational training solutions.

[Learn more](#)



THE UNIVERSITY OF
SYDNEY

We recognise and pay respect to the Elders and communities – past, present, and emerging – of the lands that the University of Sydney's campuses stand on. For thousands of years they have shared and exchanged knowledges across innumerable generations for the benefit of all.

Empower ambition,
inspire leadership

For more information

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