



Szkolenie autoryzowane

## MS 20768 Developing SQL Data Models

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### About this course

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**The focus of this 3-day instructor-led course is on creating managed enterprise BI solutions. It describes how to implement both multidimensional and tabular data models and how to create cubes, dimensions, measures, and measure groups.**

#### Audience profile

The primary audience for this course are database professionals who need to fulfil BI Developer role to create enterprise BI solutions.

Primary responsibilities will include:

- Implementing multidimensional databases by using SQL Server Analysis Services
- Creating tabular semantic data models for analysis by using SQL Server Analysis Services

#### After completing this course, students will be able to:

- Describe the components, architecture, and nature of a BI solution
- Create a multidimensional database with Analysis Services
- Implement dimensions in a cube
- Implement measures and measure groups in a cube
- Use MDX syntax

Adres korespondencyjny:

**DAGMA Szkolenia IT** | ul. Bażantów 6a/3 | Katowice (40-668)  
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KRS pod numerem 0000130206, kapitał zakładowy 75 000 zł  
Numer NIP 634-012-60-68, numer REGON: 008173852  
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w rozumieniu art. 4c ustawy o przeciwdziałaniu nadmiernym  
opóźnieniom w transakcjach handlowych.

- Customize a cube
- Implement a tabular database
- Use DAX to query a tabular model
- Use data mining for predictive analysis

## PREREQUISITES:

Before attending this course, students must have:

- Experience of querying data using Transact-SQL

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## Course Outline

### Module 1: Introduction to Business Intelligence and Data Modeling

This module introduces key BI concepts and the Microsoft BI product suite.

#### Lessons

- Introduction to Business Intelligence
- The Microsoft business intelligence platform

#### Lab : Exploring a BI Solution

- Exploring a Data Warehouse
- Exploring a data model

#### After completing this module, students will be able to:

- Describe BI scenarios, trends, and project roles.
- Describe the products that make up the Microsoft BI platform.

### Module 2: Creating Multidimensional Databases

This module describes how to create multidimensional databases using SQL Server Analysis Services.

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## Lessons

- Introduction to Multidimensional Analysis
- Data Sources and Data Source Views
- Overview of Cube Security
- Configure SSAS
- Monitoring SSAS

## Lab : Creating a multidimensional database

- Creating a Data Source
- Creating and Configuring a data Source View
- Creating and Configuring a Cube
- Adding a Dimension to a Cube
- After completing this module, you will be able to:
- Describe considerations for a multidimensional database.
- Create data sources and data source views.
- Create a cube
- Implement security in a multidimensional database.
- Configure SSAS to meet requirements including memory limits, NUMA and disk layout.
- Monitor SSAS performance.

## Module 3: Working with Cubes and Dimensions

This module describes how to implement dimensions in a cube.

## Lessons

- Configuring Dimensions
- Defining Attribute Hierarchies
- Implementing Sorting and Grouping Attributes
- Slowly Changing Dimensions

## Lab : Working with Cubes and Dimensions

- Configuring Dimensions
- Defining Relationships and Hierarchies
- Sorting and Grouping Dimension Attributes
- After completing this module, you will be able to:
- Configure dimensions.
- Define attribute hierarchies.
- Implement sorting and grouping for attributes.
- Implement slowly changing dimensions.

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## Module 4: Working with Measures and Measure Groups

This module describes how to implement measures and measure groups in a cube.

### Lessons

- Working with Measures
- Working with Measure Groups

### Lab : Configuring Measures and Measure Groups

- Configuring Measures
- Defining Regular Relationships
- Configuring Measure Group Storage
- After completing this module, you will be able to:
  - Configure measures.
  - Configure measure groups.

## Module 5: Introduction to MDX

This module describes the MDX syntax and how to use MDX.

### Lessons

- MDX fundamentals
- Adding Calculations to a Cube
- Using MDX to Query a Cube

### Lab : Using MDX

- Querying a cube using MDX
- Adding a Calculated Member
- After completing this module, you will be able to:
  - Use basic MDX functions.
  - Use MDX to add calculations to a cube.
  - Use MDX to query a cube.

## Module 6: Customizing Cube Functionality

This module describes how to customize a cube.

### Lessons

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- Implementing Key Performance Indicators
- Implementing Actions
- Implementing Perspectives
- Implementing Translations

### Lab : Customizing a Cube

- Implementing an action
- Implementing a perspective
- Implementing a translation
- After completing this module, you will be able to:
  - Implement KPIs in a Multidimensional database
  - Implement Actions in a Multidimensional database
  - Implement perspectives in a Multidimensional database
  - Implement translations in a Multidimensional database

## Module 7: Implementing a Tabular Data Model by Using Analysis Services

This module describes how to implement a tabular data model in Power Pivot.

### Lessons

- Introduction to Tabular Data Models
- Creating a Tabular Data Model
- Using an Analysis Services Tabular Data Model in an Enterprise BI Solution

### Lab : Working with an Analysis Services Tabular Data Model

- Creating an Analysis Services Tabular Data Model
- Configure Relationships and Attributes
- Configuring Data Model for an Enterprise BI Solution.

### After completing this module, students will be able to:

- Describe tabular data models
- Describe how to create a tabular data model
- Use an Analysis Services Tabular Model in an enterprise BI solution

## Module 8: Introduction to Data Analysis Expression (DAX)

This module describes how to use DAX to create measures and calculated columns in a tabular data model.

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## Lessons

- DAX Fundamentals
- Using DAX to Create Calculated Columns and Measures in a Tabular Data Model

## Lab : Creating Calculated Columns and Measures by using DAX

- Creating Calculated Columns
- Creating Measures
- Creating a KPI
- Creating a Parent – Child Hierarchy

## After completing this module, students will be able to:

- Describe the key features of DAX
- Create calculated columns and measures by using DAX

## Module 9: Performing Predictive Analysis with Data Mining

This module describes how to use data mining for predictive analysis.

## Lessons

- Overview of Data Mining
- Creating a Custom Data Mining Solution
- Validating a Data Mining Model
- Connecting to and Consuming a Data-Mining Model
- Using the Data Mining add-in for Excel

## Lab : Using Data Mining

- Creating a Data Mining Structure and Model
- Exploring Data Mining Models
- Validating Data Mining Models
- Consuming a Data Mining Model
- Using the Excel Data Mining add-in

## After completing this module, students will be able to:

- Describe considerations for data mining
- Create a data mining model
- Validate a data mining model
- Connect to a data-mining model

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- Use the data mining add-in for Excel

**Tagi:**