

# Applied Analysis Services (Multidimensional) Course



Knowledge is power! As its name suggests, the promise of Microsoft SQL Server Analysis Services is to promote better data analytics by giving information workers the right tool to analyze consistent, timely, and reliable data. Layered on top of a data warehouse, it helps organizations achieve the elusive "single version of truth". It's the most scalable semantic layer on the market!

## Syllabus

This intensive 4-day class is designed to help you become proficient with Analysis Services (Multidimensional) and acquire the necessary skills to implement OLAP and data mining solutions. Learn how to build a cube from scratch. Use the opportunity to ask questions and study best practices.

### Module 1: Introducing Analysis Services

- Analysis Services overview
- Understanding Analysis Services objects
- Lab 1: Interactive reporting with Excel
- Understanding Analysis Services architecture
- Installing and upgrading Analysis Services
- Lab 2: Analysis Services tools

### Module 2: Dimensional Modeling Fundamentals

- Dimensional modeling concepts
- Dealing with dimension changes
- Lab 1: Exploring the Adventure Works dimensional schema
- Understanding data sources
- Understanding data source views
- Lab 2: Implementing data source and data source view

### Module 3: Working with Cubes and Dimensions

- Understanding dimensions and attributes
- Auto-generating the raw dimensional model
- Lab 1: Implementing cubes and dimensions

Understanding attribute hierarchies  
Configuring attributes  
Working with Time dimensions  
Lab 2: Creating and modifying dimensions  
Understanding user-defined hierarchies  
Understanding attribute relationships  
Lab 3: Working with attributes

## Module 4: Working with Measures

Understanding measures and measure groups  
Understanding aggregate functions  
Understanding custom aggregation  
Lab 1: Implementing measures and measure groups  
Understanding dimension usage  
Understanding relationships  
Lab 2: Configuring dimension usage

## Module 5: MDX Fundamentals

Introducing MDX  
Understanding cell context  
Lab 1: Querying cubes with MDX  
Understanding calculated members  
Lab 2: Working with calculated members  
Understanding named sets  
Lab 3: Lab 3: Working with named sets  
Understanding script assignments  
Lab 4: Working with scoped assignments

## Module 6: Extending Cubes

Understanding Key Performance Indicators (KPIs)  
Lab 1: Implementing KPIs  
Understanding actions  
Lab 2: Implementing actions  
Understanding perspectives  
Lab 3: Implementing perspectives  
Understanding translations  
Lab 4: Implementing translations  
Understanding dimension and cube writeback

## Module 7: Managing Storage and Processing

Understanding partitions

Understanding storage modes

Lab 1: Partitioning a measure group

Understanding aggregations

Lab 2: Designing aggregations

Understanding processing

Understanding proactive caching

Lab 3: Processing objects

## Module 8: Managing Deployment and Security

Understanding deployment options

Lab 1: Deploying databases

Tracing Analysis Services events

Monitoring Analysis Services

Lab 2: Tracing and monitoring

Understanding Analysis Services security model

Understanding dimension data and cell security

Lab 3: Implementing security

## Module 9: Data Mining Fundamentals

Understanding data mining

Lab 1: Implementing targeted mail mining model

Building prediction queries

Lab 2: Querying mining models

Mining cube data

Lab 3: Implementing customer profiling mining model

## Module 10: (Optional) Understanding PowerPivot

Understanding PowerPivot architecture

Working with data

Introducing Data Analysis eXpressions (DAX)

Creating PowerPivot reports

## Module 10: (Substitute) Integrating SSRS with SSAS

Authoring OLAP Reports

Extending reports with end-user features

Authoring data mining reports

## Audience

BI professionals

BI developers

## Prerequisites

Experience navigating the Microsoft Windows environment

Experience in SQL Server database development

## Hardware and software requirements

Windows 7 or above

Minimum of 4GB RAM (8GB recommended)

SQL Server Developer Edition

SQL Server Data Tools or Visual Studio 2012, 2013, or 2015 with SSDT-BI

AdventureWorksDW and AdventureWorks databases installed

*Detailed software setup instructions will be sent before the event.*

## Instructor



Teo Lachev is a consultant, author, and mentor, with a focus on Microsoft Business Intelligence. Through his Atlanta-based company “Prologika”, a Microsoft Gold Partner in Data Analytics, he designs and implements innovative solutions that unlock the power of data and bring tremendous value to his customers, ranging from small companies to Fortune 50 organizations. Teo has authored and co-authored several SQL Server BI books and he has been leading the Atlanta Microsoft Business Intelligence group since he founded it in 2010. Microsoft has recognized Teo's expertise and contributions to the technical community by awarding him the prestigious Microsoft Most Valuable Professional (MVP) award since 2004.