

COURSE SYLLABUS

COURSE TITLE:	55163AC Data Modeling with SQL Business Intelligence Semantic Model (BISM) Tabular
FORMAT:	Instructor-Led
CERTIFICATION EXAMS:	None



This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs. Course content, prices, and availability are subject to change without notice.

ELEMENTS OF THIS SYLLABUS ARE SUBJECT TO CHANGE.

ABOUT THE COURSE

This course is designed to introduce the participant to SQL Business Intelligence Semantic Model (BISM) Tabular mode, data modeling, and DAX.

AUDIENCE

The course is targeted towards business analysts, business intelligence developers, and SQL Professionals.

AT COURSE COMPLETION

After completing this course, students will be able to:

- ▶ Understand Analysis Services Installation and Architecture: One Product, Two Models.
- ▶ Understand version changes: SQL Server Analysis Services.
- ▶ Understand important terms.
- ▶ Understand and utilize SQL Server Data Tools for Tabular.
- ▶ Understand and utilize projects.
- ▶ Understand and utilize importing.
- ▶ Understand and utilize loading data.
- ▶ Understand and utilize examining views.
- ▶ Understand and utilize deployment.
- ▶ Understand and utilize data sources.
- ▶ Understand and utilize data credentials.
- ▶ Understand and utilize SQL as a source.
- ▶ Understand and utilize Excel as a source.
- ▶ Understand and utilize Flat Files as a source.
- ▶ Understand and utilize Azure as a source.
- ▶ Understand and utilize SharePoint as a source.
- ▶ Understand and utilize sorting during load.
- ▶ Understand querying with MDX.
- ▶ Understand and utilize DAX syntax.
- ▶ Understand and utilize DAX data types and operator overloading.
- ▶ Understand and utilize DAX operators.
- ▶ Understand and utilize DAX values.
- ▶ Understand and utilize measures.
- ▶ Understand and utilize calculated columns.
- ▶ Understand evaluation contexts.
- ▶ Understand and utilize date calculations.



- ▶ Understand and utilize importing related tables.
- ▶ Understand and utilize creating relationships.
- ▶ Understand and utilize hierarchies.
- ▶ Understand Direct Query.
- ▶ Understand and utilize KPIs.
- ▶ Understand drillthrough.
- ▶ Understand perspectives.
- ▶ Understand and utilize PowerPivot.
- ▶ Understand and utilize Pivot Tables.
- ▶ Understand and utilize Power View.

PREREQUISITES

Before attending this course, students must have:

- ▶ A working knowledge of SQL Server

ADDITIONAL READING

To help you prepare for this class, review the following resources:

- ▶ None

MODULE 1: COURSE OVERVIEW

This module explains how the class will be structured and introduces course materials and additional administrative information.

Lessons

- ▶ Introduction
- ▶ Course Materials
- ▶ Facilities
- ▶ Prerequisites
- ▶ What We'll Be Discussing

Lab 1: COURSE OVERVIEW

- ▶ None

After completing this module, students will be able to:

- ▶ Successfully log into their virtual machine.
- ▶ Have a full understanding of what the course intends to cover.

MODULE 2: WHAT IS THE TABULAR MODEL?

SQL Server Analysis Services (SSAS) provides two different approaches for data modeling: multidimensional and tabular. While there is substantial overlap between them, there are also significant differences. In this module, we discuss feature comparisons and explain each approach, then we'll dive deeper into the tabular model as that is the focus for this course.

Lessons

- ▶ Analysis Services Installation and Architecture: One Product, Two Models
- ▶ Version Changes: SQL Server Analysis Services
- ▶ Important Terms
- ▶ SQL Server Data Tools for Tabular

Lab 1: WHAT IS THE TABULAR MODEL?

- ▶ SQL Server Data Tools for Tabular

After completing this module, students will be able to:

- ▶ Understand Analysis Services Installation and Architecture: One Product, Two Models.
- ▶ Understand version changes: SQL Server Analysis Services.
- ▶ Understand important terms.



- ▶ Understand and utilize SQL Server Data Tools for Tabular.

MODULE 3: WORKING IN TABULAR

In this module, we cover the specifics of creating projects, discuss options to either import or load data, and explore deployment.

Lessons

- ▶ Projects
- ▶ Importing
- ▶ Loading Data
- ▶ Examining Views
- ▶ Deployment

Lab 1: WORKING IN TABULAR

- ▶ Creating a Tabular Project

After completing this module, students will be able to:

- ▶ Understand and utilize projects.
- ▶ Understand and utilize importing.
- ▶ Understand and utilize loading data.
- ▶ Understand and utilize examining views.
- ▶ Understand and utilize deployment.

MODULE 4: UNDERSTANDING LOADING DATA FROM DIFFERENT SOURCES

In this module, we will explore data sources, the credentials needed to access them, and cover a few of the most common sources available.

Lessons

- ▶ Data Sources
- ▶ Data Credentials
- ▶ SQL as a Source
- ▶ Excel as a Source
- ▶ Flat Files as a Source
- ▶ Azure as a Source
- ▶ SharePoint as a Source
- ▶ Sorting During Load

Lab 1: UNDERSTANDING LOADING DATA FROM DIFFERENT SOURCES

- ▶ None

After completing this module, students will be able to:

- ▶ Understand and utilize data sources.
- ▶ Understand and utilize data credentials.
- ▶ Understand and utilize SQL as a source.
- ▶ Understand and utilize Excel as a source.
- ▶ Understand and utilize Flat Files as a source.
- ▶ Understand and utilize Azure as a source.
- ▶ Understand and utilize SharePoint as a source.
- ▶ Understand and utilize sorting during load.

MODULE 5: USING DAX AND MDX

In this module, we will discuss two different languages; DAX and MDX. We will briefly explore MDX and its use with a tabular model, then we'll cover DAX and walk-through how to use this powerful language.

Lessons

- ▶ Querying with MDX



- ▶ Basic DAX Syntax
- ▶ Evaluation Context
- ▶ Calculate Function
- ▶ Time Intelligence

Lab 1: USING DAX AND MDX

- ▶ DAX Syntax
- ▶ DAX Data Types and Operator Overloading
- ▶ DAX Operators
- ▶ DAX Values
- ▶ Measures
- ▶ Calculated Columns
- ▶ Evaluation Contexts
- ▶ Date Calculations

After completing this module, students will be able to:

- ▶ Understand querying with MDX.
- ▶ Understand and utilize DAX syntax.
- ▶ Understand and utilize DAX data types and operator overloading.
- ▶ Understand and utilize DAX operators.
- ▶ Understand and utilize DAX values.
- ▶ Understand and utilize measures.
- ▶ Understand and utilize calculated columns.
- ▶ Understand evaluation contexts.
- ▶ Understand and utilize date calculations.

MODULE 6: BUILDING DATA MODELS

In this module, we will discuss data modeling basics and explore how to utilize these concepts effectively.

Lessons

- ▶ Importing Related Tables
- ▶ Creating Relationships
- ▶ Hierarchies
- ▶ Direct Query
- ▶ KPIs
- ▶ Drillthrough
- ▶ Perspectives

Lab 1: BUILDING DATA MODELS

- ▶ Creating Relationships
- ▶ Hierarchies

After completing this module, students will be able to:

- ▶ Understand and utilize importing related tables.
- ▶ Understand and utilize creating relationships.
- ▶ Understand and utilize hierarchies.
- ▶ Understand Direct Query.
- ▶ Understand and utilize KPIs.
- ▶ Understand drillthrough.
- ▶ Understand perspectives.

MODULE 7: EXCEL POWERPIVOT AND TABULAR

In this module, we will discuss utilizing DAX with PowerPivot, pivot tables, and Power View.

Lessons

- ▶ Working with PowerPivot
- ▶ Working with Pivot Tables



- ▶ Working with PowerView

Lab 1: EXCEL POWERPIVOT AND TABULAR

- ▶ Importing Data
- ▶ Importing Large Datasets
- ▶ Importing Data with a Query
- ▶ Creating Relationships
- ▶ Creating a Cascading Relationship
- ▶ Power View

After completing this module, students will be able to:

- ▶ Understand and utilize PowerPivot.
- ▶ Understand and utilize Pivot Tables.
- ▶ Understand and utilize Power View.

