

Course 20467B: Designing Business Intelligence Solutions with Microsoft SQL Server 2012

About this Course

This five-day instructor-led course teaches students how to design and implement a BI infrastructure. The course discusses design, installation, and maintenance of a BI platform. This course maps to skills and knowledge measured by Microsoft Exam 70-467, and in conjunction with on-the-job experience, can help prepare you for the exam.

Audience Profile

This course is intended for BI professionals such as BI Architects or database professionals who need to design BI solutions. BI Architects are responsible for the overall design of the BI infrastructure, including how it relates to other data systems in use. In addition, their responsibilities include Online Analytical Processing (OLAP) cube design and integration with Microsoft SharePoint or line-of-business applications.

At Course Completion

After completing this course, students will be able to:

- Plan the components of a BI solution.
- Plan a BI infrastructure.
- Design a data warehouse.
- Design an ETL solution.
- Plan analytical data models.
- Plan a BI delivery solution.
- Design a Reporting Services solution.
- Design an Excel reporting solution.
- Plan a SharePoint Server BI solution.
- Monitor and optimize a BI solution.
- Plan for BI operations.

Prerequisites

Before attending this course, student should have:

- A basic understanding of dimensional modeling (star schema) for data warehouses.
- The ability to create Integration Services packages that include control flows and data flows.
- The ability to create a basic multidimensional cube with Analysis Services.
- The ability to create a basic tabular model with PowerPivot and Analysis Services.
- The ability to create Reporting Services reports with Report Designer.
- The ability to implement authentication and permissions in the SQL Server database engine, Analysis Services, and Reporting Services.
- Familiarity with SharePoint Server and Microsoft Office applications, particularly Excel.

Students who attend this training can meet the prerequisites by attending the following courses, or obtaining equivalent knowledge and skills:

- 10777A: Implementing a Data Warehouse with Microsoft SQL Server 2012
- 10778A: Implementing Data Models and Reports with Microsoft SQL Server 2012

Course Outline

Module 1: Planning a BI Solution

This module discusses how to plan the components of a BI solution.

Lessons

- Elements of a BI Solution
- The Microsoft BI Platform
- Planning a BI Project

Lab: Planning a BI Solution

- Scoping a BI Solution
- Determining Software Requirements

After completing this module, students will be able to:

- Describe elements of a BI Solution.
- Describe how Microsoft products can be used to implement a BI solution.
- Describe considerations for a BI project.

Module 2: Planning SQL Server Business Intelligence Infrastructure

This module explains how to plan an appropriate BI infrastructure for a given set of BI services.

Lessons

- Considerations for BI Infrastructure
- Planning Data Warehouse Hardware

Lab: Planning a BI Infrastructure

- Planning Server Topology
- Planning Data Warehouse Server Hardware

After completing this module, students will be able to:

- Describe key considerations for BI infrastructure.
- Plan data warehouse infrastructure.

Module 3: Designing a Data Warehouse

This module explains how to design a data warehouse for a given set of user requirements.

Lessons

- Data Warehouse Design Overview
- Designing Dimension Tables
- Designing Fact Tables
- Designing a Data Warehouse Physical Implementation

Lab: Designing a Data Warehouse Logical Schema

- Identifying Business Processes and Dimensions
- Designing Dimension Models and Data Warehouse Tables

Lab: Designing a Data Warehouse Physical Implementation

- Designing File Storage
- Designing Warehouse Data Structures

After completing this module, students will be able to:

- Describe a process for designing a dimensional model for a data warehouse.
- Design dimension tables for a data warehouse.
- Design fact tables for a data warehouse.
- Design and implement effective physical data structures for a data warehouse.

Module 4: Designing an ETL Solution

This module explains how to design an ETL solution for a data warehouse.

Lessons

- ETL Overview
- Planning Data Extraction
- Planning Data Transformation
- Planning Data Loads

Lab: Designing an ETL Solution

- Preparing for ETL Design
- Creating Source-to-Target Documentation
- Using SSIS To Load a Partitioned Fact Table

After completing this module, students will be able to:

- Describe considerations for designing an ETL solution.
- Plan data extraction.
- Plan data transformations.
- Plan Data loads.

Module 5: Designing Analytical Data Models

This module explains how to design analytical data models for specific BI scenarios.

Lessons

- Introduction to Analytical Data Models
- Designing an Analytical Data Model
- Designing Dimensions
- Enhancing Data Models

Lab: Comparing Analytical Data Models

- Creating a Multidimensional Data Model
- Creating a Tabular Data Model

Lab: Designing Dimensions and Hierarchies

- Creating Dimensions in a Multidimensional Data Model
- Creating Dimensions in a Tabular Data Model

Lab: Enhancing Analytical Data Models

- Enhancing a Multidimensional Data Model
- Enhancing a Tabular Data Model

After completing this module, students will be able to:

- Describe options for analytical data models.
- Design an initial multidimensional or tabular data model.
- Design dimensions in a multidimensional or tabular data model.
- Design measures and cubes in a multidimensional or tabular data model.

Module 6: Planning a BI Delivery Solution

This module explains how to choose an appropriate delivery solution for a given scenario.

Lessons

- Considerations for Delivering BI
- Common Reporting Scenarios
- Choosing a Reporting Tool

Lab: Planning a BI Delivery Solution

- Assessing Reporting Requirements

After completing this module, students will be able to:

- Describe considerations for delivering BI to users.
- Describe the key features of common reporting scenarios.
- Choose an appropriate reporting tool for a particular reporting scenario.

Module 7: Designing a Reporting Services Solution

This module explains how to design a Reporting Services solution.

Lessons

- Planning a Reporting Services Solution
- Designing Reports
- Planning Report Consistency

Lab: Designing a Reporting Services Solution

- Designing a Reporting Environment
- Creating Reusable Report Item
- Creating Reports

After completing this module, students will be able to:

- Plan a Reporting Services solution.
- Design reports.
- Plan report consistency.

Module 8: Designing a Microsoft Excel-Based Reporting Solution

This module explains how to design a reporting solution that uses Excel.

Lessons

- Using Excel for Data Analysis and Reporting
- PowerPivot for Excel
- Power View for Excel

Lab: Designing an Excel Reporting Solution

- Planning Excel Features
- Analyzing a Cube with Excel
- Creating a PowerPivot Workbook
- Using Power View in Excel

After completing this module, students will be able to:

- Describe Excel features that enable users to analyze data.
- Configure and use PowerPivot for Excel.
- Configure and use Power View in an Excel workbook.

Module 9: Planning a SharePoint Server BI Solution

This module explains how to design a SharePoint BI solution.

Lessons

Introduction to SharePoint Server as a BI Platform

- Planning Security for a SharePoint Server BI Solution
- Planning Reporting Services Configuration
- Planning PowerPivot Configuration
- Planning for PerformancePoint Services

Lab: Implementing a SharePoint Server BI Solution

- Creating a SharePoint Server Site for BI
- Configuring Reporting Services in SharePoint Server
- Configuring PowerPivot for SharePoint

Lab: Implementing a PerformancePoint Services

- Creating a PerformancePoint Dashboard

After completing this module, students will be able to:

- Describe SharePoint Server as a BI platform.
- Plan security for a SharePoint Server BI solution.
- Plan Reporting Services configuration.
- Plan PowerPivot configuration.
- Plan for PerformancePoint Services.

Module 10: Monitoring and Optimizing a BI Solution

This module explains how to monitor and optimize a BI solution.

Lessons

- Overview of BI Monitoring
- Monitoring and Optimizing the Data Warehouse
- Monitoring and Optimizing Analysis Services
- Monitoring and Optimizing Reporting Services

Lab: Monitoring and Optimizing a BI Solution

- Monitoring and Optimizing a Data Warehouse
- Monitoring and Optimizing Analysis Services
- Monitoring and Optimizing Reporting Services

After completing this module, students will be able to:

- Describe key considerations for monitoring a BI solution.
- Monitor and optimize a data warehouse.
- Monitor and optimize SQL Server Analysis Services.
- Monitor and optimize SQL Server Reporting Services.

Module 11: Operating a BI Solution

This module explains how to plan management and maintenance operations for a BI solution.

Lessons

- Overview of BI Operations
- ETL Operations
- Data Warehouse Operations
- Analysis Services Operations
- Reporting Services Operations

Lab: Operating a BI Solution

- Configuring SQL Server Integration Services
- Automate Data Warehouse Load Tasks
- Test Automated Operations

After completing this module, students will be able to:

- Describe core considerations for BI operations.
- Describe considerations and strategies for managing ETL operations.
- Describe considerations and strategies for managing data warehouse operations.
- Describe considerations and strategies for managing Analysis Services operations.
- Describe considerations and strategies for managing Reporting Services operations.