Price:	Call
Length:	35 Hours (5 days)

Introduction: This five-day instructor-led course provides students with the knowledge and skills to provision a Microsoft SQL Server database. The course covers SQL Server provision both on-premise and in Azure, and covers installing from new and migrating from an existing install.

Target Student: The primary audience for this course are database professionals who need to fulfil a Business Intelligence Developer role. They will need to focus on hands-on work creating BI solutions including Data Warehouse implementation, ETL, and data cleansing.

Prerequisites: This course requires that you meet the following prerequisites:
- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of relational databases.
- Some experience with database design.

Objectives: After completing this course, students will be able to:
- Describe the key elements of a data warehousing solution
- Describe the main hardware considerations for building a data warehouse
- Implement a logical design for a data warehouse
- Implement a physical design for a data warehouse
- Create columnstore indexes
- Implementing an Azure SQL Data Warehouse
- Describe the key features of SSIS
- Implement a data flow by using SSIS
- Implement control flow by using tasks and precedence constraints
- Create dynamic packages that include variables and parameters
- Debug SSIS packages
- Describe the considerations for implement an ETL solution
- Implement Data Quality Services
- Implement a Master Data Services model
- Describe how you can use custom components to extend SSIS
- Deploy SSIS projects
- Describe BI and common BI scenarios

Course Outline

I. Introduction to Data Warehousing
- A. Overview of Data Warehousing
- B. Considerations for a Data Warehouse Solution

II. Planning Data Warehouse Infrastructure
- A. Considerations for data warehouse infrastructure.
- B. Planning data warehouse hardware.

III. Designing and Implementing a Data Warehouse
- A. Data warehouse design overview
- B. Designing dimension tables
- C. Designing fact tables
- D. Physical Design for a Data Warehouse

IV. Columnstore Indexes
- A. Introduction to Columnstore Indexes
- B. Creating Columnstore Indexes
- C. Working with Columnstore Indexes

V. Implementing an Azure SQL Data Warehouse
- A. Advantages of Azure SQL Data Warehouse
- B. Implementing an Azure SQL Data Warehouse
- C. Developing an Azure SQL Data Warehouse
- D. Migrating to an Azure SQ Data Warehouse
- E. Copying data with the Azure data factory

VI. Creating an ETL Solution
- A. Introduction to ETL with SSIS
- B. Exploring Source Data
- C. Implementing Data Flow

VII. Implementing Control Flow in an SSIS Package
- A. Introduction to Control Flow
- B. Creating Dynamic Packages
- C. Using Containers
- D. Managing consistency.

VIII. Debugging and Troubleshooting SSIS Packages
- A. Debugging an SSIS Package
- B. Logging SSIS Package Events
- C. Handling Errors in an SSIS Package

IX. Implementing a Data Extraction Solution
- A. Introduction to Incremental ETL
- B. Extracting Modified Data
- C. Loading modified data
- D. Temporal Tables

X. Enforcing Data Quality
- A. Introduction to Data Quality
- B. Using Data Quality Services to Cleanse Data
- C. Using Data Quality Services to Match Data

XI. Using Master Data Services
- A. Introduction to Master Data Services
- B. Implementing a Master Data Services Model
- C. Hierarchies and collections
- D. Creating a Master Data Hub

XII. Extending SQL Server Integration Services (SSIS)
- A. Using scripting in SSIS
- B. Using custom components in SSIS

XIII. Deploying and Configuring SSIS Packages
- A. Overview of SSIS Deployment
- B. Deploying SSIS Projects
- C. Planning SSIS Package Execution

XIV. Consuming Data in a Data Warehouse
- A. Introduction to Business Intelligence
- B. An Introduction to Data Analysis
- C. Introduction to reporting
- D. Analyzing Data with Azure SQL Data Warehouse