

**Advanced Business Intelligence using SSIS, SSAS, and Power BI**

**Course Number:** MSBI-140WA
**Duration:** 1 day

**Overview**

Accelebrate's Advanced Business Intelligence using SSIS, SSAS, and Power BI course teaches learners practical skills for ETL (extracting, transforming, and loading data), data modeling, and data visualization.

**Prerequisites**

All attendees should have taken the [Microsoft Power BI Data Analyst (PL-300)](file:////training/microsoft-power-bi-data-analyst) course or have the equivalent knowledge for the Power BI section. Attendees must also be comfortable writing SQL queries, ideally within SQL Server and/or Azure SQL.

**Materials**

All attendees receive a course workbook that includes detailed instructional content and hands-on labs.

**Software Needed on Each Student PC**

* Microsoft 365, especially Excel
* Power BI Desktop
* Modern web browser such as Chrome or Microsoft Edge (Accelebrate will provide a browser-based connection to a remote desktop environment that includes SQL Server with SSIS and SSRS)
* Optionally, Microsoft Remote Desktop client

**Objectives**

* Create ETL Pipelines using SSIS
* Implement multidimensional and tabular data models using SSAS
* Optimize Power BI performance using different models
* Apply Advanced DAX (Data Analysis Expressions) concepts to produce more complex insights from data
* Build and operate Power BI deployment pipelines
* Compare Datasets, Dataflows, and Datamarts in Power BI

**Outline**

* SSIS Overview
	+ Import/Export Wizard
	+ Exporting Data with the Wizard
	+ Common Import Concerns
	+ Quality Checking Imported/Exported Data
* Over of Basic Control Flow
	+ Working with Tasks
	+ Understanding Precedence Constraints
	+ Annotating Packages
	+ Grouping Tasks
	+ Package and Task Properties
	+ Connection Managers
	+ Analysis Services Processing
	+ Data Profiling Task
	+ Execute Package Task
	+ Execute Process Task
	+ File System Task
	+ FTP Task
	+ Script Task Introduction
	+ Send Mail Task
* Data Flow Sources and Destinations
	+ Data Flow Task
	+ Data Flow SSIS Toolbox
	+ Working with Data Sources
	+ SSIS Data Sources
	+ Working with Data Destinations
	+ SSIS Data Destinations
* Data Flow Transformations
	+ Understanding Transformations
	+ Working with common Transformations
	+ Configuring Transformations
* Understanding Multidimensional Databases
	+ Understanding SQL Server Analysis Services (SSAS)
	+ Multidimensional Analysis
	+ Data Sources and Data Source Views
	+ KPIs
	+ Cubes
* Introduction to MDX
	+ MDX Overview
	+ Calculations in Cube
	+ Query a Cube using MDX
* Understanding the Tabular Data Model
	+ Comparing TDM to Cubes
	+ Creating measures
	+ Creating relationships
	+ Using DAX
	+ Creating KPIs
* Create and Manage Power BI Dataflows
	+ Define use cases for dataflows
	+ Create reusable assets
	+ Implement best practices
	+ Comparing Dataflows to Datasets and Datamarts
* Advanced DAX in Power BI
	+ Using IF and SWITCH
	+ Implementing iterations with ALL, ALLEXCEPT, FILTER, SUMX, AVERAGEX, and similar functions.
	+ Using Statistical functions, e.g., standard deviation, median, mode, and interquartile range
* Creating Advanced Measures using Calculation Groups
	+ Introduction
	+ Understand calculation groups
	+ Explore calculation groups features and usage
	+ Create calculation groups in a model
* Create Paginated Reports
	+ Introduction to paginated reports
	+ Get data
	+ Create a paginated report
	+ Work with charts on the report
	+ Publish the report
* Optimize Power BI Performance
	+ Use Performance analyzer
	+ Troubleshoot DAX performance by using DAX Studio
	+ Optimize a data model by using Best Practice Analyzer
* Choose a Power BI Model Framework
	+ Describe Power BI model fundamentals
	+ Determine when to develop an import model
	+ Determine when to develop a DirectQuery model
	+ Determine when to develop a composite model
	+ Choose a model framework
* Create and Manage a Power BI Deployment Pipeline
	+ Understand the deployment process
	+ Create a deployment pipeline
	+ Assign a workspace
	+ Deploy content
	+ Work with deployment pipelines
* Implementing Data Gateway in Power BI
	+ Understanding Data Gateway
	+ Configuring Data Gateway in Power BI
	+ Configuring a shared folder and SQL Server in Data Gateway