

# Course 20467C: Designing Self-Service Business Intelligence and Big Data Solutions

Five days, instructor-led

## About this Course

This five-day instructor-led course teaches students how to implement self-service Business Intelligence (BI) and Big Data analysis solutions using the Microsoft data platform. The course discusses the rationale for self-service BI, and describes how to use Microsoft SQL Server Reporting Services, Microsoft Excel, Microsoft SharePoint Server, and Microsoft Office 365 Power BI to create self-service data models and reports. The course then goes on to describe how to use Windows Azure HDInsight to perform Big Data analysis.

## Audience Profile

The primary audience for this course is database and business intelligence (BI) professionals who are familiar with data warehouses and enterprise BI solutions built with SQL Server technologies. Experienced data analysts who want to learn how to use Microsoft technologies for self-service analysis and reporting will also benefit from attending this course.

## At Course Completion

After completing this course, students will be able to:

- Describe key features and benefits of self-service BI.
- Use SQL Server Reporting Services to implement a self-service reporting solution.
- Use PowerPivot in Microsoft Excel to create analytical data models.
- Use Power Query in Microsoft Excel to import data into a data model.
- Use Power View in Microsoft Excel to create interactive data visualizations.
- Use Power Map in Microsoft Excel to create geographic data visualizations.
- Use Microsoft SharePoint Server to implement collaborative self-service BI solutions.
- Find and use public data in the Windows Azure Marketplace.
- Use Microsoft Office 365 Power BI to implement cloud-based self-service BI solutions.
- Provision and use a Windows Azure HDInsight cluster for Big Data analysis.
- Use Pig and Hive to analyze big data in Windows Azure HDInsight.
- Design and implement Big Data processes to support self-service BI.

## Pre-requisites

This course requires that you meet the following prerequisites:

- Knowledge of data warehousing and data modeling principles.
- Familiarity with Microsoft Excel and Microsoft SharePoint Server 2013.

## Course Outline

### Module 1: Introduction to Self-Service Business Intelligence

This module introduces self-service BI.

#### Lessons

- Extending Enterprise BI
- Microsoft Self-Service BI and Big Data Technologies

#### Lab: Exploring an Enterprise BI Solution

- Viewing Reports
- Analyzing Data in a Data Model
- Analyzing Data from Multiple Sources

After completing this module, you will be able to:

- Describe ways in which an enterprise BI solution can be extended.
- Identify Microsoft technologies for self-service BI and Big Data analysis.

### Module 2: Self-Service Reporting

This module describes how to use Report Builder as a tool for self-service Microsoft SQL Server Reporting Services report authoring.

#### Lessons

- Introduction to Self-Service Reporting
- Shared Data Sources and Datasets
- Report Parts

#### Lab: Implementing Self-Service Reporting

- Using Report Builder
- Simplifying Data Access for Business Users
- Using Report Parts

After completing this module, you will be able to:

- Support self-service reporting with Report Builder.
- Create shared data sources and datasets for self-service reporting scenarios.
- Use report parts as reusable report elements.

### Module 3: Self-Service Data Modeling with PowerPivot

This module describes how to use PowerPivot in Microsoft Excel to create self-service data models for analysis.

#### Lessons

- Creating Data Models in Excel with PowerPivot
- Using DAX in a PowerPivot Data Model

#### Lab: Self-Service Data Modeling with PowerPivot

- Creating a Data Model with PowerPivot
- Enhancing a Data Model
- Extending a Data Model

After completing this module, you will be able to:

- Use PowerPivot to create tabular data models in Excel.
- Enhance data models with custom DAX expressions.

#### **Module 4: Importing Data with Power Query**

This lesson describes how to use Power Query in Microsoft Excel to find and import data.

##### **Lessons**

- Introduction to Power Query
- Using Power Query to Import Data

##### **Lab: Using Power Query**

- Importing data with Power Query
- Merging Queries
- Adding a Query to a Data Model

After completing this module, you will be able to:

- Enable Power Query and use it to search for data online
- Use Power Query to import data from multiple data sources into an Excel data model

#### **Module 5: Visualizing Data with Power View in Microsoft Excel**

This module describes how to use Power View in Microsoft Excel to create interactive data visualizations.

##### **Lessons**

- Introduction to Power View

- Creating Dynamic Data Visualizations

##### **Lab: Visualizing Data with Power View**

- Using Power View

After completing this module, you will be able to:

- Describe the features of Power View
- Use Power View to create interactive data visualizations in Excel

#### **Module 6: Visualizing Geographic Data with Power Map**

This module describes how to use Power Map in Microsoft Excel to create geographic data visualizations.

##### **Lessons**

- Introduction to Power Map
- Using Power Map

##### **Lab: Visualizing Geographic Data with Power Map**

- Creating a Power Map Tour
- Visualizing Data Over Time

After completing this module, you will be able to:

- Describe the features and usage scenarios of Power Map
- Use Power Map to create visualizations of geographic data

## Module 7: Collaborative BI with Microsoft SharePoint Server

This module describes how to use Microsoft SharePoint Server in an enterprise environment to enable users to share PowerPivot workbooks and Power View reports.

### Lessons

- Sharing PowerPivot Workbooks
- Managing PowerPivot Services in SharePoint Server
- Using Power View in SharePoint Server

### Lab: Using SharePoint Server for BI Collaboration

- Sharing a PowerPivot Workbook
- Managing PowerPivot Data Refresh
- Using Power View in SharePoint Server

After completing this module, you will be able to:

- Share a PowerPivot workbooks in SharePoint Server
- Manage PowerPivot services in SharePoint Server
- Use Power View to create interactive data visualizations in SharePoint Server

## Module 8: The Windows Azure Marketplace Data Market

This module describes how to find and use datasets in the Windows Azure Marketplace.

### Lessons

- Introduction to the Windows Azure Marketplace
- Using Windows Azure Marketplace Data in Microsoft Excel

### Lab: Using the Windows Azure Marketplace

- Finding Data in the Windows Azure Marketplace
- Using Windows Azure Marketplace Data in Excel

After completing this module, you will be able to:

- Find data in the Windows Azure Marketplace
- Import Windows Azure Marketplace data into Microsoft Excel

## Module 9: Cloud Collaboration with Power BI for Microsoft Office 365

This module introduces Power BI for Microsoft Office 365, and describes how to use it for cloud-based, collaborative self-service BI.

### Lessons

- Introduction to Power BI
- Natural Language Queries with Q&A
- Sharing Queries
- The Data Management Gateway

### Lab: Using Power BI

- Provisioning Power BI
- Viewing Reports and Querying Data in Power BI
- Sharing Queries
- Cloud-Enabling a Data Source

After completing this module, you will be able to:

- Browse reports in a Power BI site
- Use Q&A to query data in a Power BI site
- Share Power Query queries with other organizational users
- Publish on-premises data sources to the cloud

### **Module 10: Introduction to Big Data and Windows Azure HDInsight**

This module introduces Big Data concepts and describes the key features of Windows Azure HDInsight.

#### **Lessons**

- Introduction to Big Data
- Windows Azure HDInsight

#### **Lab: Using Windows Azure HDInsight**

- Provisioning a Windows Azure HDInsight Cluster
- Processing Data with HDInsight
- Analyzing Big Data in Microsoft Excel

After completing this module, you will be able to:

- Describe key features of Big Data.
- Use Windows Azure HDInsight to process Map/Reduce jobs

### **Module 11: Processing Big Data with Pig and Hive**

This module introduces Pig and Hive, and describes how you can use them to process Big Data in Windows Azure HDInsight.

#### **Lessons**

- Processing Big Data with Pig
- Processing Big Data with Hive

#### **Lab: Processing Big Data with Pig and Hive**

- Processing Big Data with Pig
- Processing Big Data with Hive

After completing this module, you will be able to:

- Use Pig to process Big Data
- Use Hive to process Big Data

### **Module 12: Implementing Big Data Processing Solutions with Windows Azure HDInsight**

This module introduces key Windows Azure HDInsight technologies that enable you to design and implement automated, repeatable Big Data processing solutions that support self-service BI.

#### **Lessons**

- Automating Big Data Processing Tasks
- Integrating Windows Azure HDInsight with Enterprise Data

#### **Lab: Creating a Big Data Solution**

- Using HCatalog to Abstract Storage Locations
- Using Oozie to Coordinate a Workflow
- Using Sqoop to Export Data

After completing this module, you will be able to:

- Design and implement an automated Big Data processing solution
- Integrate Windows Azure HDInsight with Self-Service BI Solutions

**Course Inclusions:**

- Microsoft Official Curriculum (MOC) and/or Wizards Learning Courseware (WLC)
- Microsoft Certified Trainer (MCT)
- Lunch, AM and PM Snacks
- Certificate of Achievement
- Course Notes