

# Azure Data Analytics Essentials

This course is designed to introduce the various data analytics feature and capabilities of the Microsoft Azure platform.

Beginning with an overview of the Modern Data Warehouse and how various data analytics features are used to provide a complete solution, from ingesting data, performing analytics on that data and using various services to provide in depth insights to using Machine learning, IoT hubs and streaming data.

Finally, the course introduces using Power BI to report on various models and analytic solutions.

## Who Should Attend

This course is intended for individuals who want to evaluate deploying, configuring, and implementing the various data analytics opportunities provided by the Microsoft Azure platform.

This includes:

- Database developers and administrators who want to create and evaluate modern data analytics solutions
- Business Intelligence developers looking to modernise skills for the cloud

## Course Pre Requisites

**Before attending this course participants must have:**

- A background in Data and IT
- have a minimal set of programming skills and developer experience using such tools as Visual Studio and PowerShell

## What to Bring

**This is a BYO device course:**

- Please bring along your laptop or device to access the virtual lab environment

**Course Code:** ADAE  
**Course Duration:** 1 Day  
**SATV:** No

## Course Summary

- Module 1: Azure Analysis Services
- Module 2: Azure Data Bricks
- Module 3: Introduction to IoT
- Module 4: Introduction to Machine Learning
- Module 5: Analysing & Visualising Data

Microsoft  
Partner  


Gold Data Analytics  
Gold Data Platform  
Silver Cloud Platform  
Silver Learning

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## Course Outline

### Module 1: Azure Analysis Services

This module introduces Microsoft Azure Analysis Services, a fully managed Platform as a Service (PaaS) offering to host enterprise level data models in the cloud.

The module begins with an overview of the on-premise SQL Server Analysis Services (SSAS) to build multidimensional and tabular semantic models.

These data models are then compared to what is currently available in the cloud and the advantages of using such models to provide an easier and faster way for users to browse massive amounts of data at scale to perform ad-hoc analysis.

- Lesson 1: Overview of the modern data warehouse
- Lesson 2: Introduction to Data Analytics
- Lesson 3: Working with Azure Analysis Services

#### Lab 1: Introduction to Azure Analysis Services

- Exercise 1: Creating and using a semantic model
- Exercise 2: Importing a Model

### Module 2: Azure Data Bricks

This module introduces Azure Databricks, an Apache Spark-based analytics platform optimized for the Microsoft Azure cloud services platform.

Databricks is integrated with Azure to provide one-click setup, streamlined workflows, and an interactive workspace that enables collaboration between data scientists, data engineers, and business analysts.

- Lesson 1: Introduction to Azure Data Bricks
- Lesson 2: Using Azure Data Bricks to analyse big data

#### Lab 2: Create and use an Azure Databricks Workspace

- Exercise 1: Using the portal to create an Azure Databricks workspace
- Exercise 2: Transform data in Azure Databricks
- Exercise 3: Load data into an Azure SQL Data Warehouse

### Module 3: Introduction to IoT

This module introduces Azure IoT Hub. A fully managed service hosted in the cloud that acts as a central message point for bi-directional communications between IoT devices and applications.

This module describes a high level how to create and connect to an IoT hub and how these services can be used to perform real time analysis of streaming data.

- Lesson 1: Streaming Data
- Lesson 2: Introduction to the Azure IoT Hub

#### Lab 3 Create and use an Azure IoT Hub

- Exercise 1: Create an IoT Hub
- Exercise 2: Register a device
- Exercise 3: Send telemetry to an Azure IoT Hub
- Exercise 4: Receive telemetry from an Azure IoT Hub

### Module 4: Introduction to Machine Learning

This module provides a high-level overview of Machine Learning, a fundamental component in building intelligent applications in the cloud.

Using the Azure Machine learning studio, the student is introduced to the fundamentals of creating an experiment to enable predictions on data using different variables and inputs.

- Lesson 1: Introduction to Data Science and Machine Learning
- Lesson 2: Azure Machine Learning technologies
- Lesson 2: Azure Machine Learning Studio

#### Lab 4: Implementing Azure Machine Learning

- Exercise 1: Creating a Machine Learning Studio Workspace
- Exercise 2: Building and Deploying a predictive analytics web service

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## **Module 5: Analysing and Visualising Data with Power BI**

This module provides the student with an overview of Power BI, Microsoft's premier business analytics tool used to visualise data from various sources created in the preceding lab exercises.

- Lesson 1: Introduction to Power BI
- Lesson 2: Creating reports for data analytics solutions

### **Lab 5: Analysing and Visualising Data**

- Exercise 1: Creating Power BI reports for use Azure Data and Analytics Services
- Exercise 2: Creating a Power BI Dashboard for streaming data

### **Appendix A: Azure Cost Management**

### **Appendix B: Migrating your on-premise data and analytic models to the cloud**

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