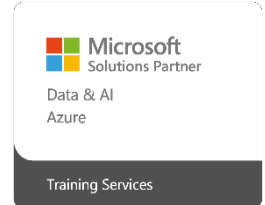# COURSE OUTLINE

Course Code: DP-100T01

Course Name: Designing and implementing a data science solution on Azure

DURATION	SKILL LEVEL	DELIVERY METHOD	TRAINING CREDITS	TECHNOLOGY
4 days	Intermediate	VILT/ILT	N/A	Azure

Course Overview

Learn how to operate machine learning solutions at cloud scale using Azure Machine Learning. This course teaches you to leverage your existing knowledge of Python and machine learning to manage data ingestion and preparation, model training and deployment, and machine learning solution monitoring with Azure Machine Learning and MLflow.

Target Audience

This course is designed for data scientists with existing knowledge of Python and machine learning frameworks like Scikit-Learn, PyTorch, and Tensorflow, who want to build and operate machine learning solutions in the cloud.

Job role:	Exam Requirements
Data Scientist	DP-100

Prerequisites

Before attending this course, students must have:

- Familiarity with managing Active Directory Domain Services security principals.
- Ability to edit Active Directory Group Policy settings.
- Experience performing basic Windows Server administration tasks.

Topics

Module 1

Design a machine learning solution.

There are many options on Azure to train and consume machine learning models. Which service best fits your scenario can depend on a myriad of factors. Learn how to identify important requirements and when to use which service when you want to use machine learning models.

Module 2:

Explore the Azure Machine Learning workspace.

Throughout this learning path you'll explore the Azure Machine Learning workspace. Learn how you can create a workspace and what you can do with it. You'll also explore the various developer tools you can use to interact with the workspace.

Module 3:

Work with data in Azure Machine Learning

Learn how to work with data in Azure Machine Learning. Whether you want to access data in notebooks or scripts, you can read data directly, through datastores, or data assets.

Module 4:

Work with compute in Azure Machine Learning

As a data scientist, you may train machine learning models on your local device. For large-scale projects, a single local device won't be enough to efficiently train machine learning models. When you use cloud compute for machine learning workloads, you'll be ready to scale your work when needed.

In Azure Machine Learning, you can use various types of managed cloud computes. By using any of the compute options in the Azure Machine Learning workspace, you'll save time on managing compute.

Whether you're working in notebooks during experimentation, or need to run scripts for production, Azure Machine Learning compute will help you run your workloads.

Most commonly, you'll work with either a **compute instance** or a **compute cluster** in Azure Machine Learning.

Learning objectives

- Choose the appropriate compute target.
- Create and use a compute instance.
- Create and use a compute cluster.

Module 5:

Automate machine learning model selection with Azure Machine Learning

Learn how to find the best model with automated machine learning (AutoML). Whether you're training a classification, regression, or forecasting model, you can use AutoML to quickly explore various featurization techniques and algorithms.

Module 6:

Use notebooks for experimentation in Azure Machine Learning

Learn how to use Azure Machine Learning notebooks for experimentation. Similar to Jupyter, the notebooks are ideal for exploring your data and developing a machine learning model.

Module 7:

Train models with scripts in Azure Machine Learning

To prepare your machine learning workloads for production, you'll work with scripts. Learn how to train models with scripts in Azure Machine Learning.

Module 8:

Optimize model training with pipelines in Azure Machine Learning

Learn how to optimize and automate model training in Azure Machine Learning by using components and pipelines.

Module 9

Manage and review models in Azure Machine Learning

Learn how to manage and review models in Azure Machine Learning by using MLflow to store your model files and using responsible AI features to evaluate your models.

Module 10:

Deploy and consume models with Azure Machine Learning

Learn how to deploy a model to an endpoint. When you deploy a model, you can get real-time or batch predictions by calling the endpoint.

This learning path helps prepare you for Exam DP-100: Designing and Implementing a Data Science Solution on Azure.

Exams and Certifications

 A Certificate of completion is issued at the end of the Course.

Schedule your Microsoft exam here: Microsoft :: Pearson VUE

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