

# DP-3014 Build Machine Learning Solutions Using Azure Databricks



**Days:** 1

**Audience:** This course is designed for aspiring data scientists and AI engineers who need to train and manage machine learning models by using Azure Databricks.

**Prerequisites:** This learning path assumes that you have experience of using Python to explore data and train machine learning models with common open source frameworks, like Scikit-Learn, PyTorch, and TensorFlow.

**Description:** Azure Databricks is a fully managed, cloud-based data analytics platform, which empowers developers to accelerate AI and innovation by simplifying the process of building enterprise-grade data applications. Built as a joint effort by Microsoft and the team that started Apache Spark, Azure Databricks provides data science, engineering, and analytical teams with a single platform for big data processing and machine learning. In this course, you'll learn how to use Azure Databricks to train and deploy machine learning models.

## OUTLINE:

### LESSON 1 - EXPLORE AZURE DATABRICKS

- Get started with Azure Databricks
- Identify Azure Databricks workloads
- Understand key concepts
- Data governance using Unity Catalog and Microsoft Purview

### LESSON 2 - USE APACHE SPARK IN AZURE DATABRICKS

- Get to know Spark
- Create a Spark cluster
- Use Spark in notebooks
- Use Spark to work with data files
- Visualize data
- Module assessment

### LESSON 3 - TRAIN A MACHINE LEARNING MODEL IN AZURE DATABRICKS

- Understand principles of machine learning
- Machine learning in Azure Databricks
- Prepare data for machine learning
- Train a machine learning model
- Evaluate a machine learning model
- Module assessment

### LESSON 4 - USE MLFLOW IN AZURE DATABRICKS

- Capabilities of MLflow
- Run experiments with MLflow
- Register and serve models with MLflow

- Module assessment

### LESSON 5 - TUNE HYPERPARAMETERS IN AZURE DATABRICKS

- Optimize hyperparameters with Optuna
- Review trials
- Scale hyperparameter optimization
- Module assessment
- 6 - Use AutoML in Azure Databricks
- What is AutoML?
- Use AutoML in the Azure Databricks user interface
- Use code to run an AutoML experiment
- Module assessment

### LESSON 7 - TRAIN DEEP LEARNING MODELS IN AZURE DATABRICKS

- Understand deep learning concepts
- Train models with PyTorch
- Distribute PyTorch training with TorchDistributor
- Module assessment

### LESSON 8 - MANAGE MACHINE LEARNING IN PRODUCTION WITH AZURE DATABRICKS

- Automate your data transformations
- Explore model development
- Explore model deployment strategies
- Explore model versioning and lifecycle management
- Module assessment