# Azure Data Lake Training Course Syllabus

## Chapter 1: Azure Data Lake Basic

- ➢ What is Azure Data Lake?
- ➢ Azure Data Lake Architecture
- ➢ Why Azure Data Lake?
- ➢ Creating a Resource Group
- ➢ Creating Azure Data Lake Account
- ➢ Exploring Data Lake Analytics
- ➢ Exploring Data Lake Store

## Chapter 2: Understanding Concepts in Azure Data Lake

- ➢ Introducing USQL Language
- ➢ pxtractors, Outputters
- ➢ What is Analytic Unit?
- ➢ Stages of Job
- ➢ What Happens When you Submit a Job?
- ➢ Azure Data Lake Job Graph
- ➢ Job Heat Map
- ➢ Schema on Read

## Chapter 3: Data flow around data Lake

- ➢ Data Flow around data lake
- ➢ Data lake and Transient clusters

## Chapter 4: Simple Data Transformations

- ➢ Aggregating Data
- ➢ Filtering Data
- ➢ Pulling Data From Multiple Files

## Chapter 5: Azure Data Lake Processing Through Databricks

- ➢ Overview
- ➢ Provision Databricks, Clusters and workbook
- ➢ Mount Data Lake to Databricks DBFS
- ➢ Explore, Analyze, Clean, Transform and Load Data

## Chapter 6: Azure Data Lake Processing through HDInsight

- ➢ overview
- ➢ Create Azure Data Lake Storage Gen 2 (source) and SQL Server (destination)
- ➢ What is Managed Identity
- ➢ Add Managed Identity to Gen2 and Database accounts
- ➢ Create HDInsight Interactive Query Cluster
- ➢ Ambari overview and UI
- ➢ Ingest dataset in to DataLake storage
- ➢ Data Extraction with Hive
- ➢ Data transformation with Hive
- ➢ Data Export using Sqoop

## Chapter 7: Working with USQL Catalog

- ➢ play iconUSQL Catalog
- ➢ Creating a Database
- ➢ Creating Schema & TableInserting Data
- ➢ Querying Data
- ➢ Create a View
- ➢ Query a View
- ➢ Create Table Valued Function
- ➢ Execute Table Valued Function
- ➢ Creating Store Procedure
- ➢ Running a Store Procedure
- ➢ Using Inline C# Function

## Chapter 8: Security Layer in Data Lake

- ➢ Introduction
- ➢ Storage Access Keys
- ➢ SAS - Shared Access Signature
- ➢ Azure Active Directory
- ➢ Access Control List (ACL)
- ➢ Firewalls and Virtual Networks
- ➢ Encryption in Transit
- ➢ Encryption at Rest
- ➢ Advanced threat protection

## Chapter 9: Data Lake Monitoring and Optimization

➢ Metrics
➢ Insights
➢ Alerts
➢ Diagnostic settings
➢ Optimization

## Chapter 10: Working with Visual Studio

➢ Installing Tools for Visual Studio
➢ Exploring Visual Studio
➢ Create Custom Function in Visual Studio

## Chapter 11: Job Monitoring

➢ Job Comparison Tool
➢ Vertex Execution View

## Chapter 12: Working with Azure CLI 2.0

➢ Introduction to Azure CLI 2.0
➢ Install and Login to Azure CLI 2.0
➢ Create Directory Structure using Azure CLI 2.0
➢ Renaming Files and Download Data Using Azure CLI 2.0
➢ Delete Data Lake Store Account Using Azure CLI 2.0