

Modernize Apps and Databases

Course Overview

Duration - 16 Hours | Level - Intermediate

Learn to leverage the power of Microsoft Azure's Apps, Data and AI solutions to modernize and build intelligent apps focusing on internal business critical applications and external customer facing apps. In this workshop you will learn more about the impactful application of generative AI, which harnesses massive data that will be huge for businesses. You will also learn to make use of Azure Data services and cloud-native app building features provided by Azure Kubernetes Services, Cosmos DB and GitHub.

Course Modules

Day 1 - Agentic DevOps and Build AI Apps on Azure using Azure App Service

Module 1: Introduction to AI Apps and agents

Cloud Introduction to AI Apps and agents

Cloud Introduction to Copilot for Azure

Module 2: Build and deploy AI apps on Azure

Cloud Build AI-powered applications with Azure App Service

Cloud Azure Container Apps

Cloud Serverless GPU integration with AI Foundry Models (preview)

Cloud Azure Kubernetes Service (AKS)

Module 3: AI Development and Agentic DevOps with GitHub

Cloud Understand the GitHub models

Cloud AI-Powered Coding with GitHub Copilot and agents

Cloud Understand Agentic DevOps

Cloud Introduction to Azure SRE Agent (Preview)

Hands On Labs

Cloud Use case 1 - Incorporate Quarkus Todo applications into Container Apps and integrate them with a relational database

Cloud Use case 2 - Building a Fruits list Quarkus web app with Azure App Service on Linux and PostgreSQL

Cloud Use case 3 - Containerizing a flightbooking app and deploying to Azure

Day 2 - Build Agentic AI apps and agents with Azure AI Foundry

Module 4: Agentic AI with Azure AI Foundry

Cloud What are Agents

Cloud Ways to build apps and agents

Cloud A deep dive into Azure AI Foundry

Cloud Design your apps with the best models from Azure AI Foundry

Cloud Use Azure AI services in Azure AI Foundry portal

Cloud Build agents using Azure AI Foundry Agent Service

Cloud Introduction to Azure AI Foundry SDK

Cloud Understand customization using prompt engineering, RAG and fine-tuning models

Hands On Labs

Cloud Use case 6 - Deploying chat app on Azure Container Apps with PostgreSQL Flexible Server

Cloud Use case 7 - Enabling semantic search in Azure Database for PostgreSQL flexible server to use Azure OpenAI to generate vector embeddings

Cloud Use case 8 - Building and deploying Contoso Real Estate chat app to support customers

Day 3 - Database options on Azure

Module 5: Build AI apps with Azure Database for PostgreSQL

Cloud Introduction to Azure Database for PostgreSQL

Cloud Architecture and high availability

Cloud Generative AI with Azure Database for PostgreSQL - Flexible Server

Cloud Accelerate delivery of GenAI with PostgreSQL capabilities in GitHub Copilot

Module 6: Build scalable and secure apps with Azure SQL Database

Cloud Introduction to Azure SQL Database

Cloud Build intelligent AI applications with Azure SQL Database

Cloud Secure your data on Azure SQL Database

Module 7: Develop AI-powered apps at any scale with Azure Cosmos DB

Cloud Introduction to Azure Cosmos DB

Cloud Global secondary index in Microsoft Azure Cosmos DB (Preview)

Cloud Get built-in vector search

Cloud Cosmos DB (NoSQL) in Fabric

Module 8: Fabric databases

Cloud What is Microsoft Fabric?

Cloud SQL database in Microsoft Fabric (Preview)

Hands On Labs

Cloud Use case 4 - Building a TODO List ASP.NET app, deploy it to Azure App Service connecting to SQL Database

Cloud Use case 5 - Deploying a data-driven Python Restaurant web app with the Azure Database for PostgreSQL

Day 4 - AI Security and Governance at Scale

Module 9: Secure and govern your AI Apps and agents

Cloud Build generative AI workloads with Well-Architected Framework

Cloud Manage app secrets with Azure Key Vault

Cloud Overview of Defender for App Service

Cloud Authentication and authorization with Entra ID

Cloud Responsible AI principles and Mitigation layers in Azure AI Foundry

Cloud Azure AI Content Safety

Cloud Azure AI Foundry Observability

Cloud Risk and Safety Evaluations

Cloud Continuous monitoring in production

Cloud AI Red Teaming Agent

Cloud Entra IDs for agents

Cloud Azure AI Foundry and Microsoft Purview integration

Hands On Labs

Cloud Use case 9 - Building a Chat bot experience using Azure Cosmos DB for MongoDB and Azure OpenAI Service

Cloud Use case 10 - Deploying chat application to answer questions from the user and tracks chat history across conversations

Cloud Use case 11 - Integrate generative AI capabilities with Azure Database for PostgreSQL Flexible Server to evaluate reviews of given AI listings