Microsoft - Develop AI agents on Azure

Course Number: AI-3026

Duration: 1 days

Course Description

This course is designed to teach participants how to create, deploy, and manage intelligent AI agents using Azure AI Foundry. Students will learn to integrate advanced AI capabilities through agents into scalable, customizable solutions.

Audience Profile

This course is designed for developers, data scientists, and IT professionals who want to build intelligent AI-driven solutions in Azure. It is ideal for individuals with a basic understanding of programming and cloud technologies looking to enhance their skills in creating scalable and interactive AI agents for business or personal projects.

Skills Gained

- Understand the concepts and applications of AI agents on Azure
- Develop AI agents using Azure AI Agent Service
- Integrate custom tools to extend the functionality of AI agents
- Build AI agents using the Semantic Kernel framework
- Orchestrate multi-agent solutions leveraging the Semantic Kernel SDK

Prerequisites

- Foundational understanding of AI concepts and Azure AI services.
- Completing the Microsoft Azure AI Fundamentals course is advisable, but not required.

Course Details

Outline

- Develop AI agents with Microsoft Foundry and Visual Studio Code
  - Understand AI agents and Microsoft Foundry Agent Service
  - Explore development approaches
  - Build your first agent in Microsoft Foundry
  - Set up Visual Studio Code for agent development
  - Configure and manage agents in Visual Studio Code
  - Extend agent capabilities with tools
  - Test, deploy, and integrate agents
  - Exercise - Build and deploy an AI agent
  - Knowledge check
- Integrate custom tools into your agent
  - Why use custom tools
  - Options for implementing custom tools
  - How to integrate custom tools
  - Exercise - Build an agent with custom tools
  - Module assessment
- Integrate MCP Tools with Azure AI Agents
  - Understand MCP tool discovery
  - Integrate agent tools using an MCP server and client
  - Use Azure AI agents with MCP servers
  - Exercise - Connect MCP tools to Azure AI Agents
  - Module assessment
- Build knowledge-enhanced AI agents with Foundry IQ
  - Understanding RAG for agents
  - Explore Foundry IQ
  - Configure data sources for knowledge bases
  - Configure retrieval with Foundry IQ
  - Exercise - Integrate an AI agent with Foundry IQ
  - Knowledge check

- Integrate your agent with Microsoft 365
  - Understand Foundry agent publishing options
  - Publish an agent from Foundry portal to Teams
  - Advanced - Use Microsoft 365 Agents Toolkit
  - Access Microsoft 365 data with Work IQ
  - Test and iterate your integrated agent
  - Exercise - Publish a Foundry agent to Teams
  - Knowledge check
- Build agent-driven workflows using Microsoft Foundry
  - Understand Workflows
  - Identify Workflow Patterns
  - Create workflows in Microsoft Foundry
  - Add Agents to a Workflow
  - Apply Power Fx in Workflows
  - Maintain Workflows in Microsoft Foundry
  - Use workflows in code
  - Exercise - Create an Agent-driven Workflow
  - Module Assessment
- Develop an AI agent with Microsoft Agent Framework
  - Understand Microsoft Agent Framework AI agents
  - Create an Azure AI agent with Microsoft Agent Framework
  - Add tools to Azure AI agent
  - Exercise - Develop an Azure AI agent with the Microsoft Agent Framework SDK
  - Knowledge check
- Orchestrate a multi-agent solution using the Microsoft Agent Framework
  - Understand the Microsoft Agent Framework
  - Understand agent orchestration
  - Use concurrent orchestration
  - Use sequential orchestration
  - Use group chat orchestration
  - Use handoff orchestration
  - Use Magentic orchestration

    - Exercise - Develop a multi-agent solution
    - Knowledge check
- Discover Azure AI Agents with A2A
    - Define an A2A agent
    - Implement an agent executor
    - Host an A2A server
    - Connect to your A2A agent
    - Exercise - Connect to remote Azure AI Agents with the A2A protocol
    - Module assessment

Develop an AI agent with Azure AI Agent Service

- What is an AI agent
- How to use Azure AI Agent Service
- Develop agents with the Azure AI Agent Service
- Exercise - Build an AI agent
- Module assessment

Integrate custom tools into your agent

- Why use custom tools
- Options for implementing custom tools
- How to integrate custom tools
- Exercise - Build an agent with custom tools
- Module assessment

Develop an AI agent with Semantic Kernel

- Understand Semantic Kernel AI agents
- Create an Azure AI agent with Semantic Kernel
- Add plugins to Azure AI agent
- Exercise - Develop an Azure AI agent with the Semantic Kernel SDK

Orchestrate a multi-agent solution using Semantic Kernel

- Understand the Semantic Kernel Agent Framework
- Create an agent group chat
- Design an agent selection strategy
- Define a chat termination strategy

- Exercise - Develop a multi-agent solution