# Develop AI Agents using Azure OpenAI and Semantic kernel Training

Duration: **1 Day**

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Develop AI Agents using Azure OpenAI and Semantic Kernel provides a practical introduction to building intelligent AI agents by combining Azure OpenAI with the Semantic Kernel SDK. Participants learn how to create applications capable of automating tasks and processing natural language by connecting large language models with custom plugins, functions, and planning capabilities.

Throughout the course, learners develop practical skills in areas such as prompt engineering, plugin development, and extending the capabilities of AI agents. Responsible AI practices are also addressed to help participants create solutions that are not only effective but can also be implemented in a reliable and ethical manner.

As the course progresses, participants combine prompts and functions using Semantic Kernel components, work with AI-driven workflows, and apply their knowledge to a practical scenario by developing an AI-powered travel assistant.

## Prerequisites

Participants should have the following knowledge and technical requirements:

- Programming experience with C#
- Visual Studio Code IDE installed
- Basic familiarity with Azure and the Azure portal
- Access to Azure OpenAI Services

## Who Should Attend

This course is particularly suitable for:

- AI engineers, solution architects, and software developers
- Technical professionals interested in generative AI applications
- Technical teams within organisations seeking to improve service automation and internal productivity through custom AI solutions

## What You Will Learn

By the end of this course, participants will be able to:

- Explain the purpose and key capabilities of the Semantic Kernel SDK,
- Create and optimize prompts for AI-powered interactions,
- Develop and integrate plugins to extend the capabilities of AI agents,
- Implement native functions that provide additional skills to AI agents,
- Combine prompts and functions to improve AI-generated responses,
- Use planning capabilities to automate function calls and improve workflows,
- Build a proof-of-concept (PoC) AI application using the Semantic Kernel SDK.

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## Training Outline

### Module 1: Build Your Kernel

- Introduction to Semantic Kernel
- Understand the role of the kernel within AI applications
- Set up the development environment
- Create a kernel object
- **Exercise:** Build a kernel object

### Module 2: Run Prompts with Semantic Kernel

- Fundamentals of prompt engineering
- Work with prompt templates
- Implement Handlebars prompt templates
- Store and manage chat history
- **Exercise:** Work with Semantic Kernel prompt templates

### Module 3: Create Semantic Kernel Plugins

- Understand native plugins
- Develop native functions
- Configure function choices
- **Exercise:** Create native functions

### Module 4: Apply Filters on Functions

- Combine prompts with functions
- Work with prompt injections
- Apply trust filters
- Filter invoked functions
- **Exercise:** Add a filter service to the kernel

### Module 5: Guided Project – Create an AI Travel Agent

- Prepare for the guided project
- Develop a currency converter
- Create a travel itinerary
- Provide contextual cues
- **Exercise:** Develop an AI-powered travel assistant