

## MS-AI3016: DEVELOP GENERATIVE AI APPS IN AZURE



DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1 Day	Intermediate	Azure AI	Instructor-led	NA

### INTRODUCTION

Generative Artificial Intelligence (AI) is becoming more accessible through comprehensive development platforms like Microsoft Foundry. Learn how to build generative AI applications that use language models to chat with your users.

### AUDIENCE PROFILE

This course is designed for developers, data scientists, and IT professionals who want to build intelligent, generative AI applications using Azure

### PREREQUISITES

Before starting this module, you should be familiar with fundamental AI concepts and services in Azure. You should also have programming experience.

### COURSE OBJECTIVES

After attending this course, delegates will be able to:

- Understand Generative AI Fundamentals
- Explore Azure AI Studio and Microsoft Foundry
- Design and Build Custom Copilots
- Integrate AI into Applications
- Apply Responsible AI Principles
- Deploy and Monitor AI Solutions

### COURSE CONTENT

#### Module 1: Plan and prepare to develop AI solutions on Azure

Microsoft Azure offers multiple services that enable developers to build amazing AI-powered solutions. Proper planning and preparation involve identifying the services you'll use and creating an optimal working environment for your development team.

##### Lessons

- Introduction
- What is AI?
- Azure AI services
- Azure AI Foundry
- Developer tools and SDKs
- Responsible AI
- Exercise - Prepare for an AI development project
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Identify common AI capabilities that you can implement in applications
- Describe Azure AI Services and considerations for using them
- Describe Azure AI Foundry and considerations for using it
- Identify appropriate developer tools and SDKs for an AI project

- Describe considerations for responsible AI

#### Module 2: Choose and deploy models from the model catalog in Microsoft Foundry

Choose the various language models that are available through the Microsoft Foundry's model catalog. Understand how to select, deploy, and test a model, and to improve its performance.

##### Lessons

- Introduction
- Explore the model catalog
- Deploy a model to an endpoint
- Optimize model performance
- Exercise - Explore, deploy, and chat with language models
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Select a language model from the model catalog.
- Deploy a model to an endpoint.
- Test a model and improve the performance of the model.

#### Module 3: Develop an AI app with the Microsoft Foundry SDK

Use the Microsoft Foundry SDK to develop AI applications with Microsoft Foundry projects.

##### Lessons

- Introduction
- What is the Microsoft Foundry SDK?
- Work with project connections
- Create a chat client
- Exercise - Create a generative AI chat app
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Describe capabilities of the Microsoft Foundry SDK.
- Use the Microsoft Foundry SDK to work with connections in projects.
- Use the Microsoft Foundry SDK to develop an AI chat app.

#### Module 4: Get started with prompt flow to develop language model apps in the Microsoft Foundry

Learn about how to use prompt flow to develop applications that leverage language models in the Microsoft Foundry.

##### Lessons

- Introduction.

- Understand the development lifecycle of a large language model (LLM) app.
- Understand core components and explore flow types.
- Explore connections and runtimes.
- Explore variants and monitoring options.
- Exercise - Get started with prompt flow.
- Knowledge check.
- Summary.

By the end of this module, you'll be able to:

- Understand the development lifecycle when creating language model applications.
- Understand what a flow is in prompt flow.
- Explore the core components when working with prompt flow.

### Module 5: Develop a RAG-based solution with your own data using Microsoft Foundry

Retrieval Augmented Generation (RAG) is a common pattern used in generative AI solutions to ground prompts with your data. Microsoft Foundry provides support for adding data, creating indexes, and integrating them with generative AI models to help you build RAG-based solutions.

Lessons

- Introduction
- Understand how to ground your language model
- Make your data searchable
- Create a RAG-based client application
- Implement RAG in a prompt flow
- Exercise - Create a generative AI app that uses your own data
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Identify the need to ground your language model with Retrieval Augmented Generation (RAG).

- Index your data with Azure AI Search to make it searchable for language models.
- Build an agent using RAG on your own data in the Azure AI Foundry portal.

### Module 6: Fine-tune a language model with Microsoft Foundry

Train a base language model on a chat-completion task. The model catalog in Microsoft Foundry offers many open-source models that can be fine-tuned for your specific model behavior needs.

Lessons

- Introduction.
- Understand when to fine-tune a language model.
- Prepare your data to fine-tune a chat completion model.
- Explore fine-tuning language models in Microsoft Foundry.
- Exercise - Fine-tune a foundation model.
- Knowledge check.
- Summary.

By the end of this module, you'll be able to:

- Understand when to fine-tune a model.
- Prepare your data to fine-tune a chat completion model.
- Fine-tune a base model in the Microsoft Foundry portal.

### Module 7: Implement a responsible generative AI solution in Microsoft Foundry

Generative AI enables amazing creative solutions but must be implemented responsibly to minimize the risk of harmful content generation.

Lessons

- Introduction
- Plan a responsible generative AI solution
- Map potential harms
- Measure potential harms
- Mitigate potential harms
- Manage a responsible generative AI solution
- Exercise - Apply content filters to prevent the output of harmful content

- Module assessment
  - Summary
- By the end of this module, you'll be able to:

- Describe an overall process for responsible generative AI solution development.
- Identify and prioritize potential harms relevant to a generative AI solution.
- Measure the presence of harms in a generative AI solution.
- Mitigate harms in a generative AI solution.
- Prepare to deploy and operate a generative AI solution responsibly.

### Module 8: Evaluate generative AI performance in Microsoft Foundry portal

Evaluating copilots is essential to ensure your generative AI applications meet user needs, provide accurate responses, and continuously improve over time. Discover how to assess and optimize the performance of your generative AI applications using the tools and features available in the Azure AI Studio.

Lessons

- Introduction
- Assess the model performance
- Manually evaluate the performance of a model
- Automated evaluations
- Exercise - Evaluate generative AI model performance
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Understand model benchmarks.
- Perform manual evaluations.
- Assess your generative AI apps with AI-assisted metrics.
- Configure evaluation flows in the Microsoft Foundry portal.

## ASSOCIATED CERTIFICATIONS & EXAM

There is no Associated Certification or Exam for this course.