

# MICROSOFT AZURE AI FUNDAMENTALS

AI-900T00-A

**Duration: 1 day; Instructor-led | Virtual Instructor-led**

## WHAT WILL YOU LEARN

This course introduces fundamentals concepts related to artificial intelligence (AI), and the services in Microsoft Azure that can be used to create AI solutions. The course is not designed to teach students to become professional data scientists or software developers, but rather to build awareness of common AI workloads and the ability to identify Azure services to support them. The course is designed as a blended learning experience that combines instructor-led training with online materials on the Microsoft Learn platform (<https://azure.com/learn>). The hands-on exercises in the course are based on Learn modules, and students are encouraged to use the content on Learn as reference materials to reinforce what they learn in the class and to explore topics in more depth.

## AUDIENCE

The Azure AI Fundamentals course is designed for anyone interested in learning about the types of solution artificial intelligence (AI) makes possible, and the services on Microsoft Azure that you can use to create them. You don't need to have any experience of using Microsoft Azure before taking this course, but a basic level of familiarity with computer technology and the Internet is assumed. Some of the concepts covered in the course require a basic understanding of mathematics, such as the ability to interpret charts. The course includes hands-on activities that involve working with data and running code, so a knowledge of fundamental programming principles will be helpful.

## METHODOLOGY

This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises.

## COURSE CONTENTS

### Module 1: Fundamental AI Concepts

Curious about artificial intelligence? Want to understand what all the buzz is about? This module introduces you to the world of AI.

#### Learning objectives

In this module, you'll learn about the kinds of solutions AI can make possible and considerations for responsible AI practices.

#### Prerequisites

None

### Module 2: Introduction to machine learning

Machine learning is the basis for most modern artificial intelligence solutions. A familiarity with the core concepts on which machine learning is based is an important foundation for understanding AI.

#### Learning objectives

After completing this module, you will be able to:

- Describe core concepts of machine learning
- Identify different types of machine learning
- Describe considerations for training and evaluating machine learning models
- Describe core concepts of deep learning and Transformers

#### Prerequisites

Before starting this module, you should have:

- A basic knowledge of mathematics
- Familiarity with Microsoft Azure and cloud computing

### Module 3: Fundamentals of Azure AI services

In this module, you learn the fundamentals of how Azure AI services can be used to build applications.

#### Learning objectives

- Understand applications Azure AI services can be used to build
- Understand how to access Azure AI services in the Azure portal
- Understand how to use Azure AI services keys and endpoint for authentication
- Create and use an Azure AI services resource in a Content Safety Studio setting

#### Prerequisites

None

### Module 4: Fundamentals of Computer Vision

Azure AI Vision service enables software engineers to create intelligent solutions that extract information from images; a common task in many artificial intelligence (AI) scenarios.

#### Learning objectives

Learn how to use the Azure AI Vision service to analyze images.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 5: Fundamentals of Facial Recognition

Face detection and analysis are important capabilities for artificial intelligence (AI) solutions. Azure AI Face service makes it easy integrate these capabilities into your applications.

#### Learning objectives

Learn how to use Azure AI Face service to detect and analyze faces in images.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 6: Fundamentals of optical character recognition

Optical character recognition (OCR) enables artificial intelligence (AI) systems to read text in images, enabling applications to extract information from photographs, scanned documents, and other sources of digitized text.

#### Learning objectives

Learn how to read text in images with Azure AI Vision.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 7: Fundamentals of Text Analysis with the Language Service

Explore Azure AI Language's natural language processing (NLP) features, which include sentiment analysis, key phrase extraction, named entity recognition, and language detection.

#### Learning objectives

Learn how to use Azure AI Language for text analysis

#### Prerequisites

Ability to navigate the Azure portal

#### Module 8: Fundamentals of question answering with the Language

Create a custom question answering knowledge base with Azure AI Language.

#### Learning objectives

After completing this module, you'll be able to understand how to use Azure AI Language to create a custom question answering project.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 9: Fundamentals of conversational language understanding

In this module, we introduce you to conversational language understanding and show how to create applications that understand language with Azure AI Language.

#### Learning objectives

In this module, you'll:

- Learn what conversational language understanding is.
- Learn about key features, such as intents and utterances.
- Build and publish a natural-language machine-learning model.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 10: Fundamentals of Azure AI Speech

Learn how to recognize and synthesize speech by using Azure AI Speech.

#### Learning objectives

In this module you will:

Learn about speech recognition and synthesis

Learn how to use Azure AI Speech

#### Prerequisites

Ability to navigate the Azure portal

#### Module 11: Fundamentals of language translation

Automated translation capabilities in an AI solution enable closer collaboration by removing language barriers.

#### Learning objectives

After completing this module, you will understand how to perform text and speech translation using Azure AI Translator and Azure AI Speech.

#### Prerequisites

Ability to navigate the Azure portal

#### Module 12: Fundamentals of Azure AI Document Intelligence

Document processing is a common task in many business scenarios. Organizations can use Azure AI Document Intelligence to automate data extraction across document types, such as receipts, invoices, and more.

#### Learning objectives

Learn how to use the prebuilt receipt processing capabilities of Azure AI Document Intelligence.

#### Prerequisites

Ability to navigate the Azure portal

**Module 13: Fundamentals of Knowledge Mining and Azure AI**

Use Azure AI Search to make your data searchable.

**Learning objectives**

In this module, you will:

- Explore Azure AI Search
- Create an Azure AI Search index
- Import data to the index
- Query the Azure AI Search index

**Prerequisites**

None

**Module 14: Introduction to generative AI**

In this module, you explore the way in which language models enable AI applications and services to generate original content based on natural language input.

**Learning objectives**

By the end of this module, you are able to:

- Understand what generative AI can do and how it appears in today's applications.
- Understand how language models can understand and generate language.
- Describe ways you can engineer good prompts and quality responses.
- Describe responsible generative AI concepts.
- Prerequisites
- Familiarity with Azure and the Azure portal.

**Module 15: 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.

**Learning objectives**

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

**Prerequisites**

Before starting this module, you should be familiar with:

- Basic software development concepts
- Basic AI concepts
- Basic Azure concepts

**Module 16: Responsible generative AI**

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

**Learning objectives**

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
- Prerequisites
- Before starting this module, you should be familiar with Azure AI Foundry. Consider completing the Introduction to Azure AI Foundry module before starting this one.

**Module 17: Fundamentals of AI agents on Azure**

49 min

AI agents represent the next generation of intelligent applications. Learn how they can be developed and used on Microsoft Azure.

**Learning objectives**

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

- Describe core concepts related to AI agents
- Describe options for agent development
- Create and test an agent in the Azure AI Foundry portal

**Prerequisites**

Before starting this module, you should be familiar with fundamental AI concepts and services in Azure.