MS-AI900T00: INTRODUCTION TO AI IN AZURE

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

INTRODUCTION

This course introduces fundamental 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 PROFILE

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.

PREREQUISITES

Prerequisite certification is not required before taking this course. Successful Azure AI Fundamental students start with some basic awareness of computing and internet concepts and an interest in using Azure AI services.
Specifically:

- Experience using computers and the internet.
- Interest in use cases for AI applications and machine learning models.
- A willingness to learn through hands-on exploration.

COURSE OBJECTIVES

After completing this course, students will be able to:

- Describe Artificial Intelligence workloads and considerations
- Describe fundamental principles of machine learning on Azure
- Describe features of computer vision workloads on Azure
- Describe features of Natural Language Processing (NLP) workloads on Azure
- Describe features of conversational AI workloads on Azure

COURSE CONTENT

Module 1: Introduction AI Concepts

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

- Introduction to AI
- Generative AI
- Computer vision
- Speech
- Natural language processing
- Extract data and insights
- Responsible AI
- Knowledge check
- Summary.

After completing this module, you will be able to:

- Learn about the kinds of solutions AI can make possible and considerations for responsible AI practices.

Module 2: Introduction to machine learning concepts

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.
Lessons

- Introduction.
- What is machine learning?
- Types of machine learning.
- Regression.
- Binary classification.
- Multiclass classification.
- Clustering.
- Deep learning.
- Transformers.
- Knowledge check.
- Summary.

After completing this module, students 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.

Module 3: Get started with Azure AI services

In this module, you learn the fundamentals of how Azure AI

services can be used to build applications.
Lessons
- Introduction.
- AI services on the Azure platform.
- Create Azure AI service resources.
- Use Azure AI services.
- Understand authentication for Azure AI services.
- Exercise - Explore Azure AI Services.
- Knowledge check.
- Summary

After completing this module, you will be able to:
- 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.

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.
Lessons
- Introduction
- Images and image processing
- Machine learning for computer vision
- Azure AI Vision
- Exercise - Analyze images in Azure AI Foundry portal
- Knowledge check
- Summary

After completing this module, you will be able to:
- Learn how to use the Azure AI Vision service to analyse images.

Module 5: Fundamentals of Facial Recognition
Face detection, analysis, and recognition are important capabilities for artificial intelligence (AI) solutions. Azure AI Face service in Azure makes it easy integrate these capabilities into your applications.
Lessons
- Introduction.
- Understand Face analysis.
- Get started with Face analysis on Azure.
- Exercise - Detect faces in Vision Studio.
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Learn how to use Azure AI Face service to detect and analyse faces in images.

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.
Lessons
- Introduction.
- Get started with Azure AI Vision.
- Get started with Vision Studio on Azure.
- Exercise - Read the text in Vision Studio.
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Learn how to read text in images with Azure AI Vision.

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.
Lessons
- Introduction.
- Understand Text Analytics.
- Get started with text analysis.
- Exercise - Analyse text in Azure AI Foundry portal.
- Knowledge check.
- Summary

After completing this module, you will be able to:
- Learn how to use Azure AI Language for text analysis.

Module 8: Fundamentals of question answering with the Language Service
Create a custom question-answering knowledge base with Azure AI Language.
Lessons
- Introduction.
- Understand question answering.
- Get started with custom question answering.
- Exercise - Use question answering with Language Studio.
- Knowledge check.
- Summary

After completing this module, you will be able to:
- Understand how to use Azure AI Language to create a custom question-answering project.

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.
Lessons
- Introduction.
- Describe conversational language understanding.
- Get started with conversational language understanding in Azure.
- Exercise - Use Conversational Language Understanding with Language Studio.
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Learn what conversational language understanding is.
- Learn about key features, such as intents and utterances.
- Build and publish a natural-language machine-learning model.

Module 10: Get started with speech on Azure
Learn how to recognize and synthesize speech by using Azure AI Speech.
Lessons
- Introduction.
- Understand speech recognition and synthesis.
- Get started with speech on Azure.
- Use Azure AI Speech.
- Exercise - Explore Speech in Azure AI Foundry portal.
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Learn about speech recognition and synthesis.
- Learn how to use Azure AI Speech.

Module 11: Fundamentals of language translation
Automated translation capabilities in an AI solution enable closer collaboration by removing language barriers.
Lessons
- Introduction
- Understand translation concepts
- Understand translation in Azure
- Get started with translation in Azure
- Exercise - Explore Azure AI Translator
- Knowledge check
- Summary

After completing this module, you will be able to:
- Understand how to perform text and speech translation using Azure AI Translator and Azure AI Speech

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.
Lessons
- Introduction.
- Explore capabilities of document intelligence.
- Understand Azure AI Document Intelligence capabilities.
- Exercise - Extract from documents in Azure AI Foundry portal.
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Learn how to use the prebuilt receipt processing capabilities of Azure AI Document Intelligence.

Module 13: Fundamentals of Knowledge Mining and Azure AI Search
Use Azure AI Search to make your data searchable.
Lessons
- Introduction.
- What is Azure AI Search?
- Identify elements of a search solution.
- Create an index in the Azure portal.
- Query data in an Azure AI Search index.
- Exercise - Explore an Azure AI Search index (UI).
- Knowledge check.
- Summary.

After completing this module, you will be able to:
- Understand how Azure AI Search implements AI through skillsets
- Learn how indexers automate data ingestion steps, including JSON serialization
- Describe the purpose of a knowledge store
- Understand how to build and query a search index

Module 14: Introduction to generative AI concepts
In this module you'll explore the way in which large language models (LLMs) enable AI applications and services to generate original content based on natural language input.
Lessons
- Introduction
- What is generative AI?
- How do language models work?
- Understand how transformers advance language models
- Understand differences in language models
- Improve prompt results
- Create responsible generative AI solutions
- Module assessment
- Summary

After completing this module, you will be able to:
- Understand how Azure AI Search implements AI through skillsets
- Learn how indexers automate data ingestion steps, including JSON serialization
- Describe the purpose of a knowledge store
- Understand how to build and query a search index

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.
Lessons
- Introduction
- What is AI?
- Azure AI services
- Azure AI Foundry
- Developer tools and SDKs
- Responsible AI
- Exercise - Explore the Azure AI Foundry portal
- Knowledge check
- Summary

After completing this module, you will 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 16: Implement a responsible generative AI solution in Azure AI 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.
- Knowledge check.
- Summary.

After completing this module, you will 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 17: Get started with AI agent development on Azure
AI agents represent the next generation of intelligent applications. Learn how they can be developed and used on Microsoft Azure.
Lessons
- Introduction
- What are AI agents?
- Options for agent development
- Azure AI Agent Service
- Exercise - Explore AI Agent development
- Knowledge check
- Summary

After completing this module, you will 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

ASSOCIATED CERTIFICATIONS & EXAM

This course will prepare delegates to write the Microsoft AI-900: Introduction to AI in Azure exam.