



# Microsoft Azure AI Engineer

by Daniel AG

## Course Description

Azure AI Services are transforming what was once considered unachievable into attainable projects. In this course, you'll dive into the capabilities of Microsoft Azure AI, Machine Learning, and Data Science. The Azure AI Engineer course includes Cognitive Services, Computer Vision Image Analysis, Natural Language Processing (NLP), Speech APIs, and more.

As a Microsoft Azure AI engineer, your role is to develop, manage, and implement AI solutions using Azure AI tools. You will collaborate with solution architects to bring their concepts to life and work alongside Data Scientists, Data Engineers, Internet of Things (IoT) Specialists, Infrastructure Administrators, and Software Developers to:

- Design comprehensive and secure AI systems from start to finish.
- Incorporate AI functionalities into various applications and solutions.

Upon completing this training program, you will be equipped to handle Representational State Transfer (REST) APIs and SDKs, creating robust solutions for Secure Image Processing, Video Processing, Natural Language Processing, Knowledge Mining, and Generative AI on Azure.

Azure AI Engineers are highly sought after in today's job market. They find abundant career opportunities across various sectors, such as healthcare, finance, and e-commerce. As more companies aim to integrate AI and machine learning into their technology infrastructures, the demand for Azure AI skills continues to grow. Therefore, the Azure AI Engineer course can be a strategic investment for your career progression.

This course prepares you for the Microsoft Certification AI-102 (Azure AI Engineer Associate). Students will also get Hands-on Labs plus over 250+ Practice questions for the exam.

## Course Information

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### Course Modules

- Introduction to AI on Azure
- Developing AI Apps with Cognitive Services
- Getting Started with Natural Language Processing
- Building Speech-Enabled Applications
- Creating Language Understanding Solutions
- Building a QnA Solution
- Conversational AI and the Azure Bot Service
- Getting Started with Computer Vision
- Developing Custom Vision Solutions
- Detecting, Analyzing, and Recognizing Faces
- Reading Text in Images and Documents
- Creating a Knowledge Mining Solution
- Develop Generative AI Solutions with Azure OpenAI Service

### With the Course Students Get:

- Comprehensive Course Materials
- Recorded Video of Each Class
- Reading Materials
- Lab Exercises
- Research Papers
- Microsoft Certification Materials
- Interview Questions
- Resume Preparation
- Placement Assistance
- On the Job Support Assistance

## Course Contents

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[www.empiredatasystems.com/microsoft-azure-ai-solution-training.html](http://www.empiredatasystems.com/microsoft-azure-ai-solution-training.html)

### Module 1: Introduction to AI on Azure

Artificial Intelligence (AI) is increasingly at the core of modern apps and services. In this module, you'll learn about some common AI capabilities you can leverage in your apps, and how those capabilities are implemented in Microsoft Azure. You'll also learn about some considerations for designing and implementing AI solutions responsibly.

# Program Curriculum

Microsoft Azure AI Engineer

## Lessons

- Introduction to Artificial Intelligence
- Artificial Intelligence in Azure

After completing This module, students will be able to:

- Describe considerations for creating AI-enabled applications.
- Identify Azure services for AI application development.

## Module 2: Developing AI Apps with Cognitive Services

Cognitive Services are the core building blocks for integrating AI capabilities into your apps. In this module, you'll learn how to provision, secure, monitor, and deploy cognitive services.

## Lessons

- Getting Started with Cognitive Services
- Using Cognitive Services for Enterprise Applications

## Lab

- Get Started with Cognitive Services Lab
- Manage Cognitive Services Security Lab
- Monitor Cognitive Services Lab
- Use a Cognitive Services Container

After completing This module, students will be able to:

- Provision and consume cognitive services in Azure.
- Manage cognitive services security.
- Monitor cognitive services.
- Use a cognitive service container.

## Module 3: Getting Started with Natural Language Processing

Natural Language Processing (NLP) is a branch of artificial intelligence that deals with extracting insights from written or spoken language. In this module, you'll learn how to use cognitive services to analyze and translate text.

## Lessons

- Analyzing Text
- Translating Text

## Lab

- Analyze Text Lab
- Translating Text

After completing This module, students will be able to:

- Use the Text Analytics cognitive service to analyze text.
- Use the Translator cognitive service to translate text.



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## Module 4: Building Speech-Enabled Applications

Many modern apps and services accept spoken input and can respond by synthesizing text. In this module, you'll continue your exploration of natural language processing capabilities by learning how to build speech-enabled applications.

### Lessons

- Speech Recognition and Synthesis
- Speech Translation

### Lab

- Recognize and Synthesize Speech Lab
- Translate Speech

After completing This module, students will be able to:

- Use the Speech cognitive service to recognize and synthesize speech.
- Use the Speech cognitive service to translate speech.

## Module 5: Creating Language Understanding Solutions

To build an application that can intelligently understand and respond to natural language input, you must define and train a model for language understanding. In this module, you'll learn how to use the Language Understanding service to create an app that can identify user intent from natural language input.

### Lessons

- Creating a Language Understanding App
- Publishing and Using a Language Understanding App
- Using Language Understanding with Speech

### Lab

- Create a Language Understanding App Lab
- Create a Language Understanding Client Application Lab
- Use the Speech and Language Understanding Services

After completing This module, students will be able to:

- Create a Language Understanding app.
- Create a client application for Language Understanding
- Integrate Language Understanding and Speech

## Module 6: Building a QnA Solution

One of the most common kinds of interaction between users and AI software agents is for users to submit questions in natural language and for the AI agent to respond intelligently with an appropriate answer. In this module, you'll explore how the QnA Maker service enables the development of this kind of solution.



# Program Curriculum

Microsoft Azure AI Engineer

## Lessons

- Creating a QnA Knowledge Base
- Publishing and Using a QnA Knowledge Base

## Lab

- Create a QnA Solution

After completing This module, students will be able to:

- Use QnA Maker to create a knowledge base
- Use a QnA knowledge base in an app or bot

## Module 7: Conversational AI and the Azure Bot Service

Bots are the basis for an increasingly common kind of AI application in which users engage in conversations with AI agents, often as they would with a human agent. In this module, you'll explore the Microsoft Bot Framework and the Azure Bot Service, which together provide a platform for creating and delivering conversational experiences.

## Lessons

- Bot Basics
- Implementing a Conversational Bot

## Lab:

- Create a Bot with the Bot Framework SDK Lab
- Create a Bot with Bot Framework Composer

After completing This module, students will be able to:

- Use the Bot Framework SDK to create a bot
- Use the Bot Framework Composer to create a bot

## Module 8: Getting Started with Computer Vision

Computer vision is an area of artificial intelligence in which software applications interpret visual input from images or video. In this module, you'll start your exploration of computer vision by learning how to use cognitive services to analyze images and video.

## Lessons

- Analyzing Images
- Analyzing Videos

## Lab

- Analyze Images with Computer Vision Lab
- Analyze Video with Video Indexer

After completing This module, students will be able to:

- Use the Computer Vision service to analyze images
- Use Video Indexer to analyze videos



## Module 9: Developing Custom Vision Solutions

While there are many scenarios where pre-defined general computer vision capabilities can be useful, sometimes you need to train a custom model with your own visual data. In this module, you'll explore the Custom Vision service, and how to use it to create custom image classification and object detection models.

### Lessons

- Image Classification
- Object Detection

### Lab

- Classify Images with Custom Vision Lab
- Detect Objects in Images with Custom Vision

After completing This module, students will be able to:

- Use the Custom Vision service to implement image classification
- Use the Custom Vision service to implement object detection

## Module 10: Detecting, Analyzing, and Recognizing Faces

Facial detection, analysis, and recognition are common computer vision scenarios. In this module, you'll explore the user of cognitive services to identify human faces.

### Lessons

- Detecting Faces with the Computer Vision Service
- Using the Face Service

### Lab

- Detect, Analyze, and Recognize Faces

After completing This module, students will be able to:

- Detect faces with the Computer Vision service
- Detect, analyze, and recognize faces with the Face service

## Module 11: Reading Text in Images and Documents

Optical character recognition (OCR) is another common computer vision scenario, in which software extracts text from images or documents. In this module, you'll explore cognitive services that can be used to detect and read text in images, documents, and forms.

### Lessons

- Reading text with the Computer Vision Service
- Extracting Information from Forms with the Form Recognizer service

### Lab

- Read Text in ImagesLab
- Extract Data from Forms



After completing This module, students will be able to:

- Use the Computer Vision service to read text in images and documents
- Use the Form Recognizer service to extract data from digital forms

## Module 12: Creating a Knowledge Mining Solution

Ultimately, many AI scenarios involve intelligently searching for information based on user queries. AI-powered knowledge mining is an increasingly important way to build intelligent search solutions that use AI to extract insights from large repositories of digital data and enable users to find and analyze those insights.

Lessons

- Implementing an Intelligent Search Solution
- Developing Custom Skills for an Enrichment Pipeline
- Creating a Knowledge Store

Lab

- Create an Azure Cognitive Search solution Lab
- Create a Custom Skill for Azure Cognitive Search Lab
- Create a Knowledge Store with Azure Cognitive Search

After completing This module, students will be able to:

- Create an intelligent search solution with Azure Cognitive Search
- Implement a custom skill in an Azure Cognitive Search enrichment pipeline
- Use Azure Cognitive Search to create a knowledge store

## Module 13: Develop Generative AI Solutions with Azure OpenAI Service

Lessons

- What is Generative AI
- Getting Started with Azure OpenAI Service
- Azure OpenAI Studio
- Types of Generative AI models and Deploying generative AI models

Lab

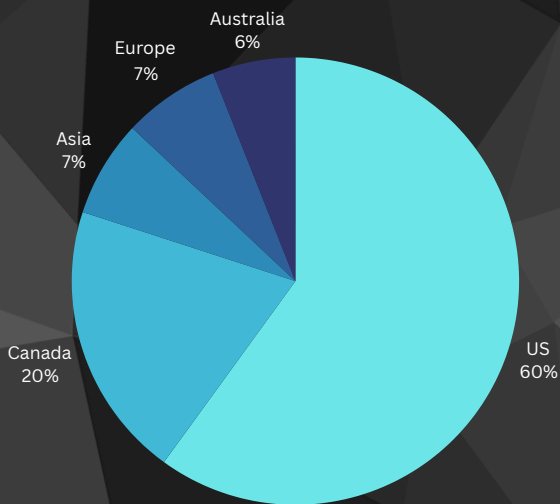
- Deploying Azure OpenAI service
- Using Azure OpenAI in your App
- Utilize prompt engineering in your app
- Generate and improve code with Azure OpenAI Service
- Generate images with a DALL-E model
- Implement Retrieval Augmented Generation (RAG) with Azure OpenAI Service

After completing This module, students will be able to:

- Create and deploy Azure OpenAI resources
- Integrated Azure OpenAI into your application through REST APIs and SDKs
- Explored prompt engineering techniques to improve model responses
- Connected own data for grounding an Azure OpenAI model



## Our Student Demographic



## Other Courses We Offer

- ✓ SQL Server Database Administration
- ✓ SQL Server Performance Tuning
- ✓ SQL Server Business Intelligence
- ✓ SQL Programming
- ✓ Microsoft Azure Administration
- ✓ Microsoft Azure Data Engineering
- ✓ DevOps Engineering
- ✓ AWS Solutions Architect
- ✓ Microsoft Azure AI Engineer

## Our Students Feedback



Please check the below link to see our student's feedback. These feedbacks are an excellent motivator for our trainers to improve in course delivery and engage more in students' training needs and career goals.

[www.empiredatasystems.com/students-feedback.html](http://www.empiredatasystems.com/students-feedback.html)

## Our Training Statistics

**16 Years of Experience**

**3671 Gratiified Students**

**112 Training Batches**

**9634 Training Hours**



# Program Partners



## About Microsoft

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Microsoft is a leading innovator and the biggest player in creating innovative SQL tools. In this certification course, top subject matter experts will share knowledge in the domain of SQL.

### Benefits of this collaboration for learners:

- Industry recognized certification from Microsoft
- Industry-specific case studies and project work

## Contact Us

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## Microsoft Certified

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