

KOENIG SOLUTIONS · COURSE OUTLINE

Advanced Azure AI Foundry

Learn to build, deploy and manage generative AI and multi-agent solutions using Azure AI Foundry, from RAG to agent orchestration.

4 Days

32 HOURS

28

TOPICS

13

HANDS-ON LABS

COURSE OVERVIEW

This course covers Azure AI Foundry's architecture, workspace components and model catalogue, including deploying foundation models, prompt engineering and building Generative AI applications. It then addresses Retrieval Augmented Generation, configuring Cognitive Search, and creating and evaluating prompt flows. The course moves into agentic AI, covering the development, tool integration and deployment of single agents with Azure AI Foundry Agent Service. It concludes with multi-agent solutions, orchestration patterns, the Microsoft Agent Framework SDK, MCP tool integration, A2A communication, and agent management, governance and responsible AI.

WHO THIS COURSE IS FOR

AI Developers

Solution Architects

Machine Learning Engineers

Software Engineers

Cloud Developers

LEARNING OBJECTIVES

- Explain the architecture and workspace components of Azure AI Foundry
- Deploy foundation models from the model catalogue
- Apply prompt engineering techniques to Generative AI applications
- Implement Retrieval Augmented Generation with Cognitive Search
- Evaluate and optimise prompt flows using metrics and tracing
- Develop single agents with Azure AI Foundry Agent Service
- Build multi-agent solutions with the Microsoft Agent Framework SDK
- Assess security, governance and responsible AI practices for agents

28 Topics

DAY 1**Azure AI Foundry Introduction, Capabilities & Gen AI Foundations**

TOPICS

3 Labs

- Introduction to Azure AI Foundry and evolution from AI Studio
- Deep Dive in the architecture and workspace components
- Explore the model catalogue and deploy foundation models
- Cost optimization & Performance Tuning
- Build and deploy a Generative AI application
- Prompt engineering techniques and best practices
- Manage endpoints and optimize model usage

DAY 2**RAG, Prompt Flow and Evaluation**

TOPICS

3 Labs

- Understand Retrieval Augmented Generation (RAG)
- Configure Cognitive Search and index enterprise data
- Implement RAG in Azure AI Foundry using prompt flows
- Create and manage prompt flows (graph view, Python SDK)
- Evaluate and improve Generative AI apps - metrics & tracing

DAY 3**Introduction to Agentic AI & Single-Agent Development**

TOPICS

3 Labs

- Introduction to Agentic AI concepts and use cases
- AI Agents vs Azure AI Agents
- Overview of Azure AI Agents and Agent Service
- Develop an AI Agent with Azure AI Foundry Agent Service
- Tool Calling and Function Calling mechanisms
- Use Azure AI Foundry extension in Visual Studio Code
- Integrate custom tools and functions into your agent
- Deploy and test agents with Azure AI Foundry SDK

TOPICS

4 Labs

- Develop multi-agent solutions with Azure AI Foundry Agent Service
- Implement multi-agent collaboration and orchestration patterns
- Develop agents using the Microsoft Agent Framework SDK
- Orchestrate multi-agent solutions with the Agent Framework
- Integrate MCP (Model Context Protocol) Tools with Azure AI Agents
- Discover agents and enable A2A communication (AI-to-AI)
- Manage and administer agents via Management Centre
- Security, Governance & Responsible AI

HANDS-ON LABS

Practise What You Learn

MODULE	ACTIVITY
Azure AI Foundry Introduction, Capabilities & Gen AI Foundations	■ Lab 1: Explore Azure AI Studio workspace and deploy a model ■ Lab 2: Perform prompt engineering experiments ■ Lab 3: Build a Generative AI chat application with Azure OpenAI
RAG, Prompt Flow and Evaluation	■ Lab 4: Create a RAG solution using own data in AI Foundry ■ Lab 5: Design and test prompt flows for document chat ■ Lab 6: Evaluate and optimize prompt flows with built-in tools
Introduction to Agentic AI & Single-Agent Development	■ Lab 7: Create a single agent with built-in tools ■ Lab 8: Extend agent capabilities with custom tool integration ■ Lab 9: Build Multi Agent Solution with Semantic Kernel
Multi-Agent Solutions, SDK Framework & Management	■ Lab 10: Connect and test MCP tools integration ■ Lab 11: Implement Agent Framework SDK for multi-agent orchestration ■ Lab 12: Explore A2A communication and agent discovery ■ Lab 13: Build a multi-agent solution using Foundry Agent Service

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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