

MICROSOFT FOUNDRY DEVELOPMENT

Detailed Course Table of Contents

Duration

40 Hours (5 Days)

Prerequisites

- Basic Python programming
- REST APIs & JSON
- Azure Fundamentals (AZ-900)

Course Objectives

- Build enterprise AI agents using Microsoft Foundry
- Develop Prompt, Workflow and Hosted Agents
- Build multi-agent systems
- Implement RAG with Azure AI Search
- Integrate MCP servers and enterprise tools
- Secure, evaluate, deploy and monitor AI agents

Modules

1. Introduction to Agentic AI

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

2. Microsoft Foundry Ecosystem

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

3. Large Language Models for Agents

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

4. Prompt Agents

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

5. Hosted Agents using SDK

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

6. Agent Tools & Function Calling

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

7. Knowledge Grounding & RAG

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

8. MCP Integration

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

9. Workflow Agents

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

10. Multi-Agent Systems

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

11. Memory & Context Management

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

12. Agent Evaluation & Tracing

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

13. Responsible AI & Security

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

14. Deployment & DevOps

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

15. Enterprise Integrations

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

16. Capstone Project

Detailed concepts, architecture, demonstrations, hands-on labs, implementation, troubleshooting, and enterprise best practices.

Advanced Topics

- Agentic Design Patterns
- Reflection & Self-Correction
- Human-in-the-Loop
- Long-running Agents
- Event-driven Agents

- Agent Versioning
- Model Routing
- Cost Optimization
- Streaming Responses
- Multimodal Agents
- AI Red Teaming
- Production Monitoring
- Migration Strategies