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# Azure AI Foundry Training

3 days (21 hours)

## Overview

Microsoft AI Foundry helps you design, test, and scale generative AI solutions on the Microsoft ecosystem, from prototyping to production. You'll learn to structure use cases (business assistants, document search, automation) using a governed, measurable, and secure approach.

The training focuses on operational implementation: defining requirements, selecting models, orchestrating prompts, RAG, evaluation, and deployment. Participants work with key components (model catalog, endpoints, secret management, observability) and apply best practices for security, compliance, and cost management.

The approach is hands-on, featuring guided workshops and reproducible demos: creating an assistant, data ingestion, setting up safeguards, testing, and monitoring. Deliverables include a functional mini-project, prompt templates, a production deployment checklist, and an evaluation plan (quality, latency, budget).

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

## Objectives

- Identify and prioritize generative AI use cases tailored to your business.
- Set up an AI Foundry environment and secure access to resources.
- Build a RAG workflow with ingestion, indexing, and search.
- Evaluate quality (tests, metrics) and iterate on prompts and parameters.
- Deploy, monitor, and optimize costs/latency in real-world conditions.

## Target Audience

- Developers and software engineers
- Data/ML engineers and data scientists
- Cloud/solution architects
- Technical project managers / Product owners

## Prerequisites

- Basic knowledge of Python or JavaScript
- Understanding of REST APIs and the JSON format
- Azure fundamentals (resources, RBAC, networking) or equivalent cloud experience
- Basic knowledge of generative AI (prompting, embeddings) is a plus

## Technical requirements

- Windows 11, macOS, or Linux (terminal access)
- Modern browser and code editor (e.g., VS Code)
- Access to an Azure tenant and resource creation permissions
- Tools: Git, Azure CLI (or equivalent), and HTTPS outbound network access

## Azure AI Foundry Training Program

[Day 1 - Morning]

### Discover Microsoft AI Foundry and define an AI project

- AI Foundry's position within the Microsoft ecosystem (Azure, models, tools)
- Identifying use cases: internal assistant, document search, business automation
- Choosing an approach: RAG, fine-tuning, agents, workflows
- Project prerequisites: data, security, latency and cost constraints
- Hands-on workshop: defining a use case and setting success criteria (quality, cost, timeline).

[Day 1 - Afternoon]

### Create your first project and run reference prompts

- Create an AI Foundry project: resources, environments, roles, and access
- Configure a model endpoint and inference parameters (temperature, top\_p, max tokens)
- Structuring prompts: instructions, context, output format, safeguards
- Set up manual tests: test cases, acceptance criteria, traces
- Hands-on workshop: Build a "business assistant" prompt with JSON outputs and non-regression tests.

[Day 2 - Morning]

## RAG: document ingestion and semantic search

- Preparing sources: PDF/HTML/SharePoint, cleaning, deduplication, metadata
- Chunking strategies: size, overlap, structure (headings, sections)
- Embeddings and indexing: model selection, dimension, cost, refresh
- Querying: top-k, filters, reranking, citations, and traceability
- Hands-on workshop: create a mini-RAG on an internal corpus and validate the quality of responses with sources.

### [Day 2 - Afternoon]

## Evaluation, observability, and cost/latency optimization

- Defining metrics: accuracy, completeness, groundedness, hallucination rate
- Set up an evaluation: test sets, scoring, version comparison
- Observability: logs, traces, versioned prompts, analysis of recurring errors
- Optimization: caching, context reduction, model selection, quotas, and budgets
- Hands-on workshop: benchmark two configurations (prompt + RAG) and choose the best one based on cost/quality.

### [Day 3 - Morning]

## Agents and tools: automating tasks with functions

- Designing an agent: objectives, memory, tools, limits, and security rules
- Defining tools/functions: input/output schemas, validation, errors
- Orchestration: sequence of steps, recovery management, idempotence
- Safeguards: action restrictions, human validation, execution policies
- Hands-on workshop: create an agent that queries a business API and generates a structured report.

### [Day 3 - Afternoon]

## Production deployment: security, compliance, and deployment

- Security: secret management, RBAC, network isolation, least privilege principles
- Compliance: sensitive data, retention, logging, usage policies
- Packaging and deployment: environments, configuration, versioning, rollback
- Run: monitoring, alerting, incident management, continuous improvement through feedback
- Hands-on workshop: Preparing a production deployment plan (security checklist + deployment pipeline + KPI tracking).

## Target Audience

This training is designed for both individuals and companies—large or small—seeking to train their teams in new advanced IT technologies or to acquire specific industry knowledge or modern methodologies.

## Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals regarding the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

## Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

## Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

## Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

## Certification

A certificate will be issued to each trainee who has completed the entire training program.