

AI-103: Azure AI Apps and Agents Developer

Build, evaluate and ship generative AI applications and agents on Azure, and prepare for the AI-103 exam.

DURATION

4 days · 32 hours

LEVEL

Intermediate

CURRICULUM

13 modules · 10 labs

DELIVERY

Live online, Onsite,
Corporate

Course overview

Building a prototype chatbot takes an afternoon. Building an AI application that gives grounded answers, uses tools safely, can be evaluated objectively and is monitored in production takes engineering discipline. This four-day course teaches that discipline using Azure AI Foundry and the SDKs developers use day to day.

Day one sets up a Foundry project, compares models, deploys them and works with prompts, structured output and function calling from code. Day two builds retrieval-augmented generation over your own documents with Azure AI Search, covering chunking, embeddings, hybrid search and citations.

Day three focuses on agents: designing an agent with instructions, tools and knowledge, connecting it to APIs and data, orchestrating multiple agents, and keeping a human in the loop where decisions matter. Day four rounds out the solution with vision, language and document intelligence capabilities, then covers evaluation, content safety, tracing and cost monitoring before a session on exam technique.

Labs are written in Python, with C# alternatives for the core exercises. Each lab extends the same solution, so you finish with a grounded assistant and an agent that you understand line by line.

This course is aligned to the AI-103 exam, reported as the successor to AI-102, which retired on 30 June 2026. As the exam is new, check its current outline on Microsoft Learn before booking; we update the course as details are confirmed.

Highlights

- 32 hours of live, code-along sessions
- Builds a grounded chat app and a tool-using agent
- Evaluation, safety and monitoring treated as core skills
- Vision, language and document intelligence in AI solutions
- Successor path for learners who planned to take AI-102

What's included

- Code-along labs in Python with C# alternatives
- End-to-end RAG solution with Azure AI Search
- Agents with tools, knowledge and multi-agent orchestration
- Evaluation runs and content safety configuration
- Tracing and monitoring of AI applications
- Vision, language and document intelligence integration
- 30 days of post-training doubt support

Who this course is for

Who should attend

- Developers building generative AI features or assistants
- Learners who were preparing for the retired AI-102 exam
- AI engineers moving from prototypes to production
- Solution architects designing agent-based systems

Prerequisites

- Programming experience in Python or C#
- Familiarity with REST APIs and JSON
- Basic Azure knowledge (AZ-900 or AI-901 level)
- A laptop with VS Code and Python installed

Detailed curriculum — 4 days, 32 hours, 13 modules, 10 hands-on labs

Day 1 Foundry Projects, Models and Prompting

8 hours

1.1 Planning an AI solution

- Azure AI Foundry hubs, projects and resources
- Deployment types, quotas and regions
- Choosing and comparing models
- Responsible AI planning

LAB Create a Foundry project and compare two models · 40 min

1.2 Generative AI from code

- SDK authentication with Entra ID
- Structured outputs
- Streaming and token management
- System prompts and prompt templates
- Function calling

LAB Build a chat client with function calling · 60 min

1.3 Customising models

- Prompt engineering vs RAG vs fine-tuning
- Small language models and cost trade-offs
- When fine-tuning is justified

Day 2 Retrieval-Augmented Generation

8 hours

2.1 Preparing knowledge

- Chunking strategies
- Indexing pipelines and skillsets
- Embeddings and vector dimensions
- Keeping indexes current

LAB Index a document set with integrated vectorisation · 50 min

2.2 Search and retrieval

- Vector, keyword and hybrid search
- Filters and security trimming
- Semantic ranking
- Query rewriting

LAB Tune retrieval quality with hybrid search and ranking · 45 min

2.3 Grounded generation

- Prompting with retrieved context
- Handling “I don’t know” cases
- Citations and source attribution

LAB Build a grounded assistant with citations · 60 min

Day 3 Building AI Agents

8 hours

3.1 Agent design

- Instructions, tools and knowledge
- Threads, runs and state
- Foundry Agent Service
- Choosing an agent framework

LAB Create an agent with file search and a code interpreter · 50 min

3.2 Tools and integration

- Custom function and OpenAPI tools
- Model Context Protocol overview
- Connecting to enterprise data
- Authentication for tools

LAB Give an agent a custom API tool with scoped permissions · 55 min

3.3 Multi-agent orchestration

- Orchestration patterns
- Human-in-the-loop approvals
- Handoffs between agents
- Failure handling

LAB Orchestrate two agents with a human approval step · 45 min

Day 4 AI Services, Evaluation, Operations and Exam Readiness

8 hours

4.1 Vision, language and documents

- Image analysis and multimodal prompts
- Document intelligence for forms and invoices
- Language services for extraction and classification
- Speech in AI applications

LAB Extract invoice data and pass it to an agent · 45 min

4.2 Evaluation and safety

- Evaluation datasets and metrics
- Content filters and prompt shields
- Groundedness, relevance and safety evaluators
- Red-teaming basics

LAB Run an evaluation and compare two prompt versions · 45 min

4.3 Operating AI applications

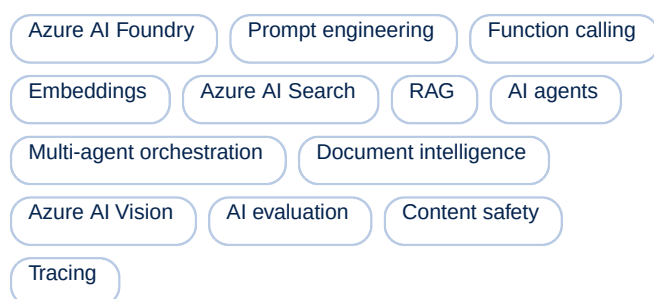
- Tracing with OpenTelemetry
- Deployment and versioning
- Monitoring usage and cost

4.4 Exam readiness

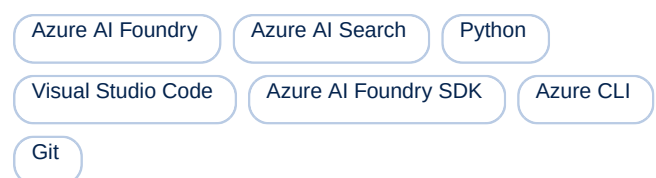
- Exam format and code-based questions
- Practice questions with review

Skills and tools

Skills you will build



Tools used in class



Certification exam

This course is aligned to the exam below and prepares you for it. The exam itself is booked and taken with the vendor.

Exam Azure AI Apps and Agents Developer (AI-103)

Exam code AI-103

Delivery	Online proctored, Test centre
Validity	1 year (free online renewal assessment)
Official page	https://learn.microsoft.com/credentials/

Exam skill areas covered
Implement Azure AI solution
Implement Azure AI solution and retrieval solutions

Exam details are pending verification. Confirm the current exam code, format and fee on the official vendor page before booking.

Frequently asked questions

I was preparing for AI-102. Is this the right course?

Yes. AI-102 retired on 30 June 2026 and AI-103 is the reported successor, with a stronger focus on generative AI and agents.

Which language do the labs use?

Python is the main language, with C# alternatives for the core exercises.

How is this different from AI-200?

AI-103 focuses on building AI apps and agents, while AI-200 focuses on broader Azure application development that integrates AI features.

What happens if Microsoft updates the AI-103 exam?

We map the curriculum to the current published skills outline and revise it when Microsoft changes the exam. Always check the latest outline on Microsoft Learn before booking.

Do you run weekend batches?

Yes. Weekend batches cover the same 32 hours across consecutive Saturdays and Sundays, with timings in IST that also suit learners in the Gulf.

Can you run a private batch for our team?

Yes. We run private online or onsite batches for corporate teams, and we can weight the labs towards your own AI use cases and data. Request a corporate quote with your team size and preferred dates.

Book a batch or talk to an advisor

Course page: aceskillsconsulting.com/course/ai-103-azure-ai-apps-and-agents-developer · Email: info@aceskillsconsulting.com

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