

Azure AI Fundamentals

Microsoft Azure AI Fundamentals — AI-901

EXAM OVERVIEW

Current exam: AI-901: Microsoft Azure AI Fundamentals.

Exam update: The English-language AI-901 exam was updated on April 15, 2026. It measures two skill areas — Identify AI concepts and capabilities (40–45%) and Implement AI solutions by using Microsoft Foundry (55–60%).

Passing score: 700. Candidates should have conceptual knowledge of AI solutions in Azure, foundational technical skills, Python coding syntax/programming techniques, and familiarity with Azure resources.

Familiarity with REST APIs, SDKs, and CLIs is also recommended.

AI-901 Syllabus — Detailed Topics

1. Artificial Intelligence Fundamentals

- Artificial Intelligence basics and common AI workloads.
- Machine learning concepts and fundamental principles.
- Deep learning fundamentals and neural-network concepts.
- Predictive analytics and common prediction scenarios.
- Conversational AI and agentic AI scenarios.
- Computer vision workloads and capabilities.
- Natural Language Processing (NLP) and text-analysis workloads.
- Real-world AI scenarios involving generative AI, agents, text, speech, vision, and information extraction.

2. Responsible AI Principles

- Fairness — identify considerations for fairness in an AI solution.
- Reliability and safety — identify considerations that support dependable and safe AI behavior.
- Privacy and security — identify privacy and security considerations.
- Inclusiveness — consider accessibility and inclusive experiences.
- Transparency — understand the importance of explaining AI behavior and outcomes.
- Accountability — understand responsibility for AI systems and their outcomes.

3. AI Models and Core AI Workloads

- Understand how generative AI models work.
- Identify an appropriate AI model based on its capabilities.
- Identify appropriate deployment options and configuration parameters.



- Understand common text-analysis techniques: keyword extraction, entity detection, sentiment analysis, and summarization.
- Identify speech-recognition and speech-synthesis capabilities.
- Identify computer-vision and image-generation capabilities.
- Identify techniques for extracting information from text, images, audio, and video.

4. Azure AI Services

The learner should understand the purpose and appropriate use of Azure AI capabilities in practical scenarios. Current objectives emphasize text analysis, speech, computer vision, image generation, and information extraction through Microsoft Foundry.

- Azure AI Vision and vision capabilities.
- Azure Speech and speech recognition/synthesis.
- Azure Language and text-analysis capabilities.
- Azure AI Translator and language-translation scenarios.
- Azure AI Search and information-retrieval scenarios.
- Azure Document Intelligence and document/form extraction scenarios.
- Azure Content Understanding for extracting information from documents, images, audio, and video.

5. Generative AI Fundamentals

- Large Language Models (LLMs) and generative AI model concepts.
- Prompt engineering, including effective system and user prompts.
- AI-generated text, images, and other content.
- Chatbots, copilots, and lightweight generative-AI applications.
- AI hallucinations and model limitations.
- Model selection, deployment options, and configuration parameters.
- Responsible use of generative AI.

6. Microsoft Foundry

- Understand the role of Microsoft Foundry in developing AI solutions.
- Deploy a model and interact with it in the Foundry portal.
- Create lightweight chat-client applications using the Foundry SDK.
- Implement AI applications using text, speech, vision, image-generation, and information-extraction capabilities.
- Use Foundry to create and test a single-agent solution.
- Create a lightweight client application for an AI agent.

7. AI Agents and Automation

- Understand agentic AI scenarios and AI-agent fundamentals.
- Create and test a single-agent solution in the Foundry portal.
- Understand agent-based workflows and orchestration concepts.



- Understand how agents can support automation and business processes.
- Recognize appropriate use cases and limitations of autonomous or semi-autonomous AI systems.

8. Python and Technical Fundamentals

- Basic Python coding syntax and programming techniques.
- REST API concepts.
- SDK concepts and basic AI-service interaction.
- CLI concepts.
- Basic Azure resource familiarity.
- Cloud-based authentication and authorization concepts.

AI-901 Exam Skill Distribution

Skill area	Weight
Identify AI concepts and capabilities	40–45%
Implement AI solutions by using Microsoft Foundry	55–60%

Detailed Current Microsoft Objectives

Identify AI concepts and capabilities (40–45%)

- Describe principles of responsible AI.
- Describe considerations for fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability.
- Describe how generative AI models work.
- Identify an appropriate AI model based on capabilities.
- Identify appropriate model deployment options and configuration parameters.
- Identify scenarios for common AI workloads, including generative and agentic AI, text analysis, speech, computer vision, and information extraction.

Implement AI solutions by using Microsoft Foundry (55–60%)

- Create effective system and user prompts for generative AI models.
- Deploy a model and interact with it in the Foundry portal.
- Create a lightweight chat client using the Foundry SDK.
- Create and test a single-agent solution in the Foundry portal.
- Create a lightweight client application for an agent.
- Build lightweight applications for text analysis and speech.
- Interpret visual input and create visual outputs using generative models.
- Build lightweight vision applications.



- Extract information from documents, forms, images, audio, and video using Azure Content Understanding in Foundry Tools.

Recommended Preparation

- Use the current AI-901 study guide rather than retired AI-900 objectives.
- Practice responsible AI principles and common AI workloads.
- Study generative AI, model selection, prompts, deployment, and configuration.
- Get hands-on experience with Microsoft Foundry, including models and agents.
- Practice text, speech, computer vision, image generation, and information extraction scenarios.
- Review basic Python, REST APIs, SDKs, CLIs, and Azure resources.
- Use Microsoft's AI-901 practice assessment and exam sandbox.

Source note: The official Microsoft Learn AI-901 study guide and exam page were used to align this update with the current 2026 exam objectives. Supplied syllabus topics have been retained where they fit the current objectives, while current Microsoft terminology and skill weighting have been added for accuracy.