

M56204A Developing Microsoft Azure Solutions

Duration: 5 Days (40 hours)

Course Overview

Not every Azure application includes generative AI.

Across businesses worldwide, developers continue to build APIs, web applications, background services, integrations, event-driven systems, and serverless solutions using Azure's core platform services. These applications rely on technologies such as Azure App Service, Azure Functions, Azure Storage, Azure Service Bus, Cosmos DB, Key Vault, and Azure Monitor—the same services that power thousands of production workloads every day.

Artificial intelligence is becoming an important part of application development, but AI is only one component of a modern cloud solution.

Before an application can call an AI model, it still needs authentication, storage, APIs, messaging, monitoring, deployment, and secure access to data.

Those are the skills this course develops.

This course provides the practical foundation required to build modern Azure applications. Whether the goal is to become a skilled Azure developer or to prepare for AI-powered application development, the core services and development practices covered throughout this course form the basis of successful Azure solutions.

This five-day instructor-led course is designed primarily for Azure Administrators who have some experience with Azure and want a more in depth administrative knowledge of Azure services and how to architect a solution. Lessons include virtualisation, automation, networking, storage, identity, security, data platform, and application infrastructure. This course outlines how decisions in each of these areas affect an overall solution.

Audience Profile

This course is designed for software developers who want to build modern applications using Microsoft Azure.

Whether you're new to Azure or looking to strengthen your cloud development skills, this course provides a practical, hands-on introduction to the core services used to build real-world Azure applications.

This course is ideal for:

- Software developers with experience in C#, .NET, or another modern programming language.
- .NET developers looking to transition from on-premises applications to the cloud.
- Backend developers building APIs, microservices, and serverless applications.
- Developers who want to understand Azure's core platform services before moving into AI-focused development.
- Azure developers who want to refresh or expand their knowledge of Azure application development.
- Anyone who previously intended to study for AZ-204 and wants to learn the valuable Azure development skills it covered.

Prerequisites

To get the most from this course, you should have:

- A basic understanding of software development concepts.
- Experience writing code in C# and .NET (recommended), although many of the Azure concepts apply regardless of language.
- Familiarity with REST APIs, HTTP, and JSON.
- A Microsoft Azure subscription (a free Azure account is sufficient for many of the demonstrations and labs).

No prior Azure experience is required, as we'll introduce each service from first principles before building increasingly capable cloud applications.

After Completing This Course

By the end of the course, you'll have the knowledge and practical experience to design, build, secure, deploy, and monitor cloud-native applications using Azure's core services.

You'll also have the Azure development foundation needed to confidently progress to more specialised topics, including AI-200, Azure AI services, cloud architecture, and DevOps.

Course Outline

Module	Lesson	Subjects
1. Implement Azure App Service Web Apps	1.1 Explore Azure App Service	Examine Azure App Service Examine Azure App Service plans Deploy to App Service Explore authentication and authorization in App Service Discover App Service networking features
	1.2 Configure web app settings	Configure application settings Configure general settings Configure path mappings Enable diagnostic logging Configure security certificates
	1.3 Scale apps in Azure App Service	Examine scale out options Identify autoscale factors Enable autoscale in App Service Explore autoscale best practices
	1.4 Explore deployment slots	Explore staging environments Examine slot swapping Swap deployment slots

Module	Lesson	Subjects
		Route traffic in App Service
2. Implement Azure Functions	2.1 Explore Azure Functions	Discover Azure Functions Compare hosting options Scale Azure Functions
	2.2 Develop Azure Functions	Azure Functions development Create triggers and bindings Connect Functions to Azure services
3. Develop solutions that use Blob Storage	3.1 Explore Blob Storage	Blob Storage overview Resource types Security features
	3.2 Manage Blob lifecycle	Lifecycle management Lifecycle policies Archive and rehydration
	3.3 Work with Blob Storage	Storage SDK Create clients Containers Metadata and properties
4. Develop solutions that use Azure Cosmos DB	4.1 Explore Cosmos DB	Benefits Resource hierarchy Consistency levels APIs Request Units

Module	Lesson	Subjects
	4.2 Work with Cosmos DB	.NET SDK Stored procedures Triggers User-defined functions Change Feed
5. Implement Containerized Solutions	5.1 Azure Container Registry	Registry concepts Storage Build tasks Dockerfiles
	5.2 Azure Container Instances	Container Instances Restart policies Environment variables Azure Files
	5.3 Azure Container Apps	Container Apps Authentication Revisions & Secrets Dapr integration
6. Implement User Authentication & Authorization	6.1 Microsoft Identity Platform	Identity platform Service principals Permissions & consent Conditional Access
	6.2 Microsoft Authentication Library (MSAL)	MSAL overview Initialize client applications
	6.3 Shared Access Signatures	SAS overview When to use SAS Stored access policies
	6.4 Microsoft Graph	Graph overview REST API

Module	Lesson	Subjects
		SDKs Best practices
7. Implement Secure Azure Solutions	7.1 Azure Key Vault	Key Vault overview Best practices Authentication
	7.2 Managed Identities	Identity flow Configure identities Acquire tokens
	7.3 Azure App Configuration	App Configuration Key-values Feature flags Secure configuration
8. Implement API Management	8.1 API Management	API Management overview Gateways Policies Subscriptions Certificates
9. Develop Event-based Solutions	9.1 Azure Event Grid	Event Grid Schemas Durability Webhooks Filtering
	9.2 Azure Event Hubs	Event Hubs Capture Scaling Security Client SDK

Module	Lesson	Subjects
10. Develop Message-based Solutions	10.1 Azure Message Queues	Service Bus Queues Topics & Subscriptions Azure Queue Storage
11. Monitor & Troubleshoot Azure Solutions	11.1 Monitor app performance	Application Insights Log-based metrics Instrumentation Availability tests Application Map
12. Integrate Caching & Content Delivery	12.1 Azure Cache & CDN	Azure Cache for Redis Content Delivery Networks (CDNs)