

48 HORAS

## AUDIENCIA

- Students in this course are interested in Azure development or in passing the Microsoft Azure Developer Associate certification exam.
- Students should have 1-2 years experience as a developer. This course assumes students know how to code and have a fundamental knowledge of Azure.
- It is recommended that students have some experience with PowerShell or Azure CLI, working in the Azure portal, and with at least one Azure-supported programming language. Most of the examples in this course are presented in C\# .NET.

### AZ-203T01-A: Develop Azure Infrastructure as a Service compute solutions

#### INTRODUCTION

In this course students will gain the knowledge and skills needed to implement Azure IaaS services and features in their development solutions. The course covers provisioning virtual machines, using Batch Service to deploy/maintain resources, and how to create containerized solutions by using Azure Kubernetes Service.

#### AT COURSE COMPLETION

After completing this course, students will be able to:

- Learn how to create and deploy virtual machines by using the Azure Portal, PowerShell, and through code.
- Learn how to create and deploy Azure Resource Manager templates by using the Azure Portal and Visual Studio.
- Understand the different encryption options and learn how to encrypt existing and new deployments.
- Understand how the Azure Batch service works
- Learn how to create and run batch jobs by using the Azure CLI
- Learn how to create and run batch jobs by using code
- Learn how to use the Azure Batch Service API to manage jobs
- Learn core concepts for Azure Kubernetes Service (AKS)
- Learn how to deploy AKS clusters
- Publish an image to the Azure Container Registry
- Learn about Azure Container Instances and how to deploy to them

## PREREQUISITES

- Students should have 1-2 years experience as a developer. This course assumes students know how to code and have a fundamental knowledge of Azure.
- It is recommended that students have some experience with PowerShell or Azure CLI, working in the Azure portal, and with at least one Azure-supported programming language. Most of the examples in this course are presented in C\# .NET.

## COURSE OUTLINE

### Module 1: Implement solutions that use virtual machines

- Provision VMs
- Create ARM templates
- Configure Azure Disk Encryption for VMs

### Module 2: Implement batch jobs by using Azure Batch Services

- Azure Batch overview
- Run a batch job by using the Azure CLI and Azure Portal
- Run batch jobs by using code
- Manage batch jobs by using the Batch Service API

### Module 3: Create containerized solutions

- Create an Azure Managed Kubernetes Service (AKS) cluster
- Create container images for solutions
- Publish an image to the Azure Container Registry
- Run containers by using Azure Container Instance or AKS

### AZ-203T02-A: Develop Azure Platform as a Service compute solutions

#### INTRODUCTION

In this course will gain the knowledge and skills needed to implement Azure Platform as a Service feature and services in their development solutions. Students will learn how to create and manage Azure App Service resources, integrate push and offline sync in their mobile apps, and how to document an API. Students will also learn how to create and test Azure Functions.

## AT COURSE COMPLETION

After completing this course, students will be able to:

- Understand App Service core concepts and capabilities
- Know how to create App Service web apps by using Azure CLI, Azure Portal, and PowerShell.
- Be able to create continuous and triggered WebJobs
- Push their app on to the Mobile App service
- How to register apps for push notifications
- Know how to create an APIM instance and create a new API
- Know how to use Swashbuckle to create Swagger objects in ASP.NET Core
- Understand the core features and functionality of Azure Functions
- Be able to create functions, bindings, and triggers
- Know common patterns for Durable Functions and be able to create them

## COURSE OUTLINE

### Module 1: Create App Service web apps

- Azure App Service core concepts
- Creating an Azure App Service web app
- Creating background tasks by using WebJobs in Azure App Service

### Module 2: Creating Azure App Service mobile apps

- Getting started with mobile apps in App Service
- Enable push notifications for your app
- Enable offline sync for your app

### Module 3: Create Azure App Service API apps

- Creating APIs
- Using Swagger to document an API

### Module 4: Implement Azure Functions

- Azure Functions overview
- Develop Azure Functions using Visual Studio
- Implement durable functions

## AZ-203T03-A: Develop for Azure storage

## INTRODUCTION

In this course students will gain the knowledge and skills needed to leverage Azure storage services and features in their development solutions. It covers Azure Table storage, Azure Cosmos DB, Azure Blob, and developing against relational databases in Azure.

## AT COURSE COMPLETION

After completing this course, students will be able to:

- Understand the features and uses of Azure Table storage
- Know how to utilize Shared Key authorization
- Know how to use the Azure Table storage REST service to manage data
- Understand core features and functionality of Azure Cosmos DB
- Be able to manage containers and items
- Be able to create and update documents
- Know how the Azure SQL Database service works
- Be able to perform database operations by using code
- Understand when and why to use Azure Blob storage
- Know how to set and retrieve Blob storage properties and metadata
- Know how to replicate and copy Blobs

## COURSE OUTLINE

### Module 1: Develop solutions that use Azure Table storage

- Azure Table storage overview
- Authorization in Table storage
- Table service REST API

### Module 2: Develop solutions that use Azure Cosmos DB storage

- Azure Cosmos DB overview
- Managing containers and items
- Create and update documents by using code

### Module 3: Develop solutions that use a relational database

- Azure SQL overview
- Create, read, update, and delete database tables by using code

### Module 4: Develop solutions that use Microsoft Azure Blob storage

- Azure Blob storage overview
- Working with Azure Blob storage

## AZ-203T04-A: Implement Azure security

### INTRODUCTION

In this course students will gain the knowledge and skills needed to include Azure authentication and authorization services in their development solutions. Students will learn how identity is managed and utilized in Azure solutions by using the Microsoft identity platform. Students will also learn about access control (claims-based authorization and role-based access control) and how to implement secure data solutions. Throughout the course students learn how to create and integrate these resources by using the Azure CLI, REST, and application code.

### AT COURSE COMPLETION

After completing this course, students will be able to:

- Understand the architecture of the Microsoft identity platform
- Be able to implement OAuth2 authentication in their solutions
- Be able to use Azure Key Vault to store and retrieve authentication information
- Learn how to use claims-based authorization in their development solutions
- How to manage access to resources using RBAC through the REST API
- Understand encryption options
- Learn how to encrypt data with Transparent Data Encryption
- Manage and utilize encryption keys by using the Azure key Vault

### COURSE OUTLINE

#### Module 1: Implement authentication

- Microsoft identity platform
- Implement OAuth2 authentication
- Implement managed identities for Azure resources
- Implement authentication by using certificates, forms-based authentication, or tokens
- Implement multi-factor authentication

#### Module 2: Implement access control

- Claims-based authorization
- Role-based access control (RBAC) authorization

#### Module 3: Implement secure data solutions

- Encryption options
- End-to-end encryption
- Implement Azure confidential computing
- Manage cryptographic keys in Azure Key Vault

## AZ-203T05-A: Monitor, troubleshoot, and optimize Azure solutions

### INTRODUCTION

In this course students will gain the knowledge and skills needed to ensure applications hosted in Azure are operating efficiently and as intended. Students will learn how Azure Monitor operates and how to use tools like Log Analytics and Application Insights to better understand what is happening in their application. Students will also learn how to implement autoscale, instrument their solutions to support monitoring and logging, and use Azure Cache and CDN options to enhance the end-user experience.

### AT COURSE COMPLETION

After completing this course, students will be able to:

- Understand how Azure Monitor works
- Know where and how Azure Monitor collects data
- Understand autoscale patterns and best practices for scaling their solutions
- How to use the Azure CLI to communicate with a specific copy of a resource
- How to handle transient faults in your solution
- Know how to add default code to web pages, console apps, and Windows desktop apps to support telemetry
- Know how to use dashboards and other tools to monitor and troubleshoot their app
- Understand how Azure Cache for Redis operates and how to configure and interact with it
- Know how to manage Azure CDN

### COURSE OUTLINE

#### Module 1: Introduction to Azure Monitor

- Overview of Azure Monitor

#### Module 2: Develop code to support scalability of apps and services

- Implement autoscale
- Implement code that addresses singleton application instances
- Implement code that handles transient faults

#### Module 3: Instrument solutions to support monitoring and logging

- Configure instrumentation in an app or server by using Application Insights
- Analyze and troubleshoot solutions by using Azure Monitor

## Module 4: Integrate caching and content delivery within solutions

- Azure Cache for Redis
- Develop for storage on CDNs

## AZ-203T06-A: Connect to and consume Azure, and third-party, services

### INTRODUCTION

This course is all about communication between apps and services. Students will learn how to create and manage their own APIs by using API Management, and how to use the different event- and message-based services in Azure within their development solutions. Throughout the course students learn how to create and integrate these resources by using the Azure Portal, Azure CLI, REST, and application code.

### AT COURSE COMPLETION

After completing this course, students will be able to:

### COURSE OUTLINE

#### Module 1: Develop an App Service Logic App

- Azure Logic Apps overview
- Create Logic Apps by using Visual Studio
- Create custom connectors for Logic Apps
- Create custom templates for Logic Apps

#### Module 2: Integrate Azure Search within solutions

- Create and query an Azure Search Index
- Full text search in Azure Search

#### Module 3: API Management

- Introduction to the API Management service
- Securing your APIs
- Defining API policies

#### Module 4: Develop event-based solutions

- Implement solutions that use Azure Event Grid
- Implement solutions that use Azure Event Hubs
- Implement solutions that use Azure Notification Hubs

#### Module 5: Develop message-based solutions

- Implement solutions that use Azure Service Bus
- Implement solutions that use Azure Queue Storage queues