

Azure Developer Certification: Developing Solutions for Microsoft Azure (AZ-203)

Modality: Virtual Classroom

Duration: 5 Days

If you enroll in this course without the Master Subscription plan, you receive a **Free Official Exam Voucher** (excluding purchases using Training Vouchers / SATV) for the AZ-203 Exam. This course does not include Exam Voucher if enrolled within the Master Subscription, however, you can request to purchase the Official Exam Voucher separately.

About this Course:

Students undertaking this course will develop the ability and skills required to implement Azure IaaS services and its elements during the phase of solutions development. In this course, you will learn provisioning virtual machines utilizing Batch Service to install or maintain resources and the creation of containerized solutions via Azure Kubernetes Service.

The course will also cover details about Azure Platform as a service feature so that the learner can develop the skills and acquire the knowledge required to implement the platform. Moreover, the skills for creating and managing Azure App Service resources, integrate push, procedure for documenting an API, and offline synchronization in the mobile applications will also be taught in this course. If you enroll in this course, then you can also learn about Azure Functions' creation and testing.

The course also covers features and services of Azure storage and students will learn to use it in their development solutions. You will also become familiar with developing against Azure's relational databases along with Azure Blob, Azure Table storage, and Azure Cosmos DB.

When working on a development solution that needed authentication and authorization of Azure, then this course is best for you. Moreover, you will learn identity management and utilization in solutions of Azure by using the identity platform of Microsoft. In this course, access control is also covered so students will learn not only about implementation of data security protocols but also giving claim-based authorization and role-based access control. Students during this course will learn about the creation and integration of such resources using application code, REST, and Azure CLI.

Azure Monitor, Application Insights and other tools like Log Analytics usage will also be taught to the students in this course, so that they can better understand the best way to go about for an application. The implementation of autoscale is also part of the course to deepen the understanding, whereas how to instrument their solutions in order to offer support to logging and monitoring is a plus for the students. How students can enhance end-user experience using Azure Cache and CDN is a question many desire to be answered. This question and all its dynamics will be aptly covered in this course.

The money question is also important to consider whenever attempting exam for any certification. Why should you consider Azure Developer Certification? Firstly, it will boost your chances of

promotion in your existing workplace, whereas your average per annum salary can easily go all the way up to **\$122,500**.

Audiences:

This course is ideal for students with interest in Azure development and/or for those who have previously acquired Azure Developer Associate certification.

Prerequisites:

- Having at least 1 – 2 years of development experience is a pre-requisite for this course. The course contains some technical knowledge and language, which can only be understood by people who know how to code or are familiar with Azure.
- Although not a prerequisite, but it is highly recommended for the students undertaking this course to have PowerShell or Azure CLI experience along with basic knowledge of Azure portal and one Azure-supported programming language.

Course Outline:

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

Module 1: Implement solutions that use virtual machinesStudents will learn how to properly plan for VM deployment. It covers VM creation by using the Azure Portal, PowerShell, and through code. It also covers creating and using ARM templates for repeatable deployments and how to use Azure Disk Encryption to secure information on the VM.

Lessons

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

After completing this module, 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.

Module 2: Implement batch jobs by using Azure Batch ServicesAzure Batch creates and manages a pool of compute nodes (virtual machines), installs the applications you want to run, and schedules jobs to run on the nodes.

Lessons

- 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

After completing this module, students will be able to:

- 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

Module 3: Create containerized solutions You can build and run modern, portable, microservices-based applications that benefit from Kubernetes orchestrating and managing the availability of those application components. Kubernetes supports both stateless and stateful applications as teams progress through the adoption of microservices-based applications.

Lessons

- 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

After completing this module, students will be able to:

- 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

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

Module 1: Create App Service web apps Azure App Service Web Apps (or just Web Apps) is a service for hosting web applications, REST APIs, and mobile back ends. Web Apps not only adds the power of Microsoft Azure to your application, such as security, load balancing, autoscaling, and automated management.

Lessons

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

After completing this module, 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

Module 2: Creating Azure App Service mobile appsThe Mobile Apps feature of Azure App Service gives enterprise developers and system integrators a mobile-application development platform that's highly scalable and globally available.

Lessons

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

After completing this module, students will be able to:

- Push their app on to the Mobile App service
- How to register apps for push notifications

Module 3: Create Azure App Service API appsThis module covers how to create and document an Azure App Service API.

Lessons

- Creating APIs
- Using Swagger to document an API

After completing this module, students will be able to:

- 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

Module 4: Implement Azure FunctionsAzure Functions is a solution for easily running small pieces of code, or "functions," in the cloud. You can write just the code you need for the problem at hand, without worrying about a whole application or the infrastructure to run it.

Lessons

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

After completing this module, students will be able to:

- 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

AZ-203T03-A: Develop for Azure storage

Module 1: Develop solutions that use Azure Table storage Azure Table storage is a service that stores structured NoSQL data in the cloud, providing a key/attribute store with a schemaless design. Because Table storage is schemaless, it's easy to adapt your data as the needs of your application evolve.

Lessons

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

After completing this module, 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

Module 2: Develop solutions that use Azure Cosmos DB storage This module covers Azure Cosmos DB storage. It instructs students on how it works, how to manage containers and items, and create and update documents by using code.

Lessons

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

After completing this module, students will be able to:

- Understand core features and functionality of Azure Cosmos DB
- Be able to manage containers and items
- Be able to create and update documents

Module 3: Develop solutions that use a relational database SQL Database is a general-purpose relational database managed service in Microsoft Azure that supports structures such as relational data, JSON, spatial, and XML.

Lessons

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

After completing this module, students will be able to:

- Know how the Azure SQL Database service works
- Be able to perform database operations by using code

Module 4: Develop solutions that use Microsoft Azure Blob storage Azure Blob storage is Microsoft's

object storage solution for the cloud. Blob storage is optimized for storing massive amounts of unstructured data. Unstructured data is data that does not adhere to a particular data model or definition, such as text or binary data.

Lessons

- Azure Blob storage overview
- Working with Azure Blob storage

After completing this module, students will be able to:

- 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

AZ-203T04-A: Implement Azure security

Module 1: Implement authenticationMicrosoft identity platform is an evolution of the Azure Active Directory (Azure AD) identity service and developer platform. It allows developers to build applications that sign in all Microsoft identities, get tokens to call Microsoft Graph, other Microsoft APIs, or APIs that developers have built.

Lessons

- 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

After completing this module, 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

Module 2: Implement access controlThis module covers claims-based and role-based access control.

Lessons

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

After completing this module, students will be able to:

- Learn how to use claims-based authorization in their development solutions
- How to manage access to resources using RBAC through the REST API

Module 3: Implement secure data solutions This module covers securing data at rest and during transmission.

Lessons

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

After completing this module, students will be able to:

- Understand encryption options
- Learn how to encrypt data with Transparent Data Encryption
- Manage and utilize encryption keys by using the Azure key Vault

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

Module 1: Introduction to Azure Monitor Azure Monitor is the central service that includes all of tools you need to monitor and optimize your solution.

Lessons

- Overview of Azure Monitor

After completing this module, students will be able to:

- Understand how Azure Monitor works
- Know where and how Azure Monitor collects data

Module 2: Develop code to support scalability of apps and services This module covers how applications scale and how to handle some troubleshooting.

Lessons

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

After completing this module, students will be able to:

- 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

Module 3: Instrument solutions to support monitoring and logging This module covers adding code to your app to send the data to Azure Monitor.

Lessons

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

After completing this module, students will be able to:

- 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

Module 4: Integrate caching and content delivery within solutions This module shows students how to leverage Azure Cache for Redis and Azure CDNs to deliver assets to users more quickly.

Lessons

- Azure Cache for Redis
- Develop for storage on CDNs

After completing this module, students will be able to:

- Understand how Azure Cache for Redis operates and how to configure and interact with it
- Know how to manage Azure CDN