

**Azure Development Syllabus (AZ-203)****Cloud Computing Introduction**

- What is Cloud Computing
- Cloud Characteristics
- Cloud Computing Service Models
- Deployment Models in Cloud Computing
- Advantages and Disadvantages of Cloud Computing
- Cloud Computing Job Roles.
- Cloud Computing Platforms and Certifications.

**Getting Starting with Azure**

- Introduction to Azure
- Why, What and Benefits of Azure
- Azure Hosting Models
- Azure Services
- Subscribing to Microsoft Azure
- Azure Portals
- Azure Key Concepts
- Azure Resource Group
- Installing Microsoft Azure SDK

**Azure Storage Service**

- About Storage Service and Account
- Creating a Storage Account
- Working with Blob Storage
  - Types of Blobs (Block, Append, Page)
  - Container and Metadata
  - Soft Copy
  - Azure Storage Explorer
  - Transfer Data using AzCopy
  - Programming Blob Storage
  - Async Blob Copy
  - Configure Custom Domain
  - Scale Blob Storage
  - Storage Service Encryption
- Manage Access / Securing Storage

- Create and Manage Shared Access Signature
- Account SAS vs Service SAS
- Using Stored Access Policies
- Regenerating Keys
- Encrypt Keys using Azure Key Vault integration
- Programming in C#
- Working with Table Storage
  - Understanding NoSQL Database
  - Creating Table and Entities using Storage Explorer
  - Entities and Properties
  - Table storage vs COSMOS DB Table API
  - Programming Table Storage
- Azure Queues Storage
  - Understanding Async Communication using Queues
  - Comparing Azure Queues and Service Bus Queues
  - Programming Queues
- Azure SMB File Storage
  - Common usage of File Storage
  - Shares, Directory and File
  - Managing Using Azure Portal
  - Programming File Storage

### **Implement and Manage Application Services**

- Introduction
- App Service - Application Types
- Deploy Web Apps
  - Deploying Web App directly from Visual Studio
  - Automate deployment from Dropbox and One Drive
  - Create, configure and deploy packages
  - Implement pre- and post-deployment actions;
- App Service plans;
  - Create App Service Plan
  - Migrate Web Apps between App Service plans;
  - Create a Web App within an App Service plan
- Configuring Web Apps
  - Application Settings Configuration,

- Database Connection Strings,
- Configuring Handlers and Virtual Directories,
- Manage App Services
  - Configure a custom domain name
  - Enable SSL for your custom domain
  - Understanding Deployment Slots and Roll back deployments;
  - App Service Protection
  - Manage Roles for an App service
- Configure Web Apps for scale and resilience
  - Horizontal and Vertical Scaling of a Web App
  - Configure auto-scale
  - Change the size of an instance
- Monitoring, Debugging and Diagnosis
  - Retrieve Diagnostics data
  - View Streaming Logs
  - Configure endpoint monitoring
  - Configuring Alerts
  - Configure diagnostics
  - Use remote debugging
  - Monitor Web App resources
- Azure Traffic Manager to Scale out Globally

### **Implement Azure Functions**

- About Azure Functions.
- Azure Webjobs vs Azure Functions
- Create and Configure an Azure Function
- Create an event processing function
  - Timer Triggered Function
  - Blog Storage Triggered Function
- Implement an Azure-connected functions
  - Adding message to Storage Queue
  - Connecting to SQL Database
- Creating Azure Functions through Visual Studio
- Azure Durable Functions
- Walkthrough: Creating Image Thumbnail

**Azure CosmosDB Service**

- What is CosmosDB
- Global Replication and Consistency Levels
- Understanding SQL Model database Schema
- Creating and Saving Documents using Portal
- Programming Schema
- Adding / Editing / Deleting and Reading Documents

**Azure App Service - Logic Apps**

- Introduction
- Triggers and Actions
- Creating a Simple Logic App
- Handling array of Items using for-each and condition
- Logic App with Variables
- Add Custom Function with Azure Function
- Using Custom API App in Logic App
- Azure Functions vs Logic Apps

**App Service - API Apps**

- Introduction
- Creating an API App
- Deploying an API App
- Consuming an API App
- Authentication and Authorization in API App.
- Using API App in Logic App

**API Management Service**

- Overview of API Management
- Components of API Management System.
- API Apps vs API Management.
- Create managed APIs.
- Configure API management policies.
- Protect APIs with rate limits.
- Add caching to improve performance.

**Azure Service Bus**

- Service Bus Basics
- Hosting WCF Service in Azure
- Relayed Messaging
- Service Bus Queues
- Topics and Subscriptions
- Notification Hubs
- Monitoring Event Hubs
- Handling Sessions
- Handling Transactions

**Key Vault**

- Secrets vs Keys
- Accessing Keys and Secrets
- Use cases for Key Vault
- Use Azure Key Vault from a Web Application
- Using Key Vault with ARM Template
- Encrypt and Decrypt BLOBS in Azure Storage

**Redis Caching**

- Caching Overview
- What is Redis Cache
- Creating a Redis Cache
- Developing Redis Cache Client
- Controlling Expiration

**Implement Azure Search within Solution**

- About Search Service,
- Create Search Service,
- Create Index
- Import Data,
- Handle Search Results
- Programming Search in .NET using Azure Search SDK

**Authentication and Authorization using Azure Active Directory**

- Application Types Scenarios
- Multi-Tenant vs Single-Tenant

- Integrating ASP.NET MVC Applications with Azure AD
- Integrating ASP.NET Web API Applications with Azure AD
- Claims Based Authentication
- Role Based Authentication
- Implementing Azure AD B2C Collaboration
- Social Identity Provider Authentication
  - Username and Password
  - Microsoft Account
  - Facebook
  - Google
  - Twitter
- Microsoft Graph API

**Docker Registry**

- Azure Container Registry
- Azure Container Instance

**Brief About Microservices and Kubernetes**

- What is Monolithic Application
- What are Microservices
- Kubernetes Architecture
- Azure Kubernetes Service (AKS)
- Example