



# AZURE DEVELOPER ASSOCIATE

Programming & development

Course Curriculum



# AZURE DEVELOPER ASSOCIATE

## **Module 1: Introduction to Azure**

- What is Serverless
- Function as a Service

## **Module 2: Azure Functions**

- Introduction to Azure Functions
- Storage Considerations
- Anatomy of a function
- Authorization Levels
- Azure Functions Debugging
- Key Concepts
- VSCode Extension
- Runtimes
- Windows vs Linux Hosting
- Templates
- Function Configuration
- Hosts Configuration
- Plan Services
- Triggers & Bindings
- Supported Bindings
- Binding Direction
- Trigger & Bindings Scenarios
- Binding Expressions
- Local Settings File
- Azure Functions Core Tools
- Custom Handlers
- Unreachable
- Durable Functions
- Patterns of Durable Functions
- Functions on Kubernetes
- Functions





## **Module 3: Virtual Machines**

- Introduction to Virtual Machines
- Operation Systems
- Cloud Init
- Sizes
- Working with Azure Managed Identities
- ACUs
- MobileApp
- VM Generations
- 3 Ways To Connect
- SSH
- RDP
- Bastion
- Windows Vs Linux
- Update Management
- Bastion
- Windows VM & RDP
- Linux VM & SSH
- Follow Along VM Monitoring



## **Module 4: ARM Templates**

- Introduction to ARM Templates
- Skeleton
- Resources
- Parameters
- Functions
- Variables Outputs
- Launch an ARM Template

## **Module 5: ACI (Azure Container Instances)**

- Introduction to ACI
- Restart Policies
- Environment Variables
- Persistent Storage
- Troubleshooting
- Create an Azure Container Instances



## **Module 6: Azure Container Registry (ACR)**

- Introduction to ACR
- Registry Tasks

## **Module 7: Azure App Service**

- Introduction to Azure App Service
- Runtimes
- Custom Containers
- Deployment Slots
- App Service Environment
- Deployment
- Azure App Service Plan
- WebJobs
- Configure & Deploy App Service
- Trigger a Deploy via Github Actions
- Create Deployment Slots
- Scaling Azure App Service



## **Module 8: Azure Tables Cosmos DB**

- Key Value Store
- Document Store
- Mongo DB
- Graph Database
- Apache Tinkerpop & Gremlin
- Tables
- Cosmos DB
- Table Account Storage vs Cosmos DB

## **Module 9: Cosmos DB Advanced**

- Introduction to Cosmos DB
- Cosmos DB APIs
- Core Components
- Cosmos DB Explorer
- Choosing a Partition Key



- Choosing a Unique Key
- Containers
- Containers Capacity
- Database Level Shared Throughput
- Reading Data
- Request Units
- Consistency Levels

## **Module 10: Azure Storage Accounts**

- Introduction to Storage Accounts
- Storage Comparison
- Core Storage Services
- Performance Tiers
- Access Tiers
- AZCopy
- Setting & retrieving properties & metadata
- Use AZCopy to copy files to Storage Accounts
- Modify metadata of blob storage objects
- Copy blob storage between containers



## **Module 11: Azure Active Directory**

- Introduction to Azure Active Directory
- AD vs AAD
- Terminology
- Tenant
- AD DS
- Azure AD Connect
- Users
- Groups
- Assign Access Rights
- External Identities
- Create a Tenant
- Upgrade License
- User & Groups
- Guest Users
- Mass Import
- MFA



- Self Service Rest Password

## **Module 12: Azure Roles**

- Type of Roles
- IAM Access Controls
- Classic Administrator
- RBAC
- AD Roles
- Roles
- Policies vs RBAC
- AD Roles vs RBAC

## **Module 13: Azure Key Vault**

- Introduction to Azure Key Vault
- HSM & FIPS
- Vault
- Key Vault API
- Recovery Options
- Pricing
- Keys
- Double Encryption
- Secrets
- X509 Certificates
- X509 Chain of Trust
- X509 Certificate Format
- Cert Extensions
- Cert Signing Request
- Certs
- Composition of a Cert
- Certificate Policy
- Azure Key Vault
- Keys
- Backup & Restore Key
- Rotate Key





## **Module 14: Microsoft Graph**

- Graph API
- Graph Connectors
- Graph Data Connect
- Azure Front Door
- Azure App Configuration

## **Module 15: Application Insights**

- Application Insights
- Open Telemetry
- Instrumentation
- Auto Instrumentation
- Application Insights
- Sampling
- Usage Analysis
- Custom Events



## **Module 16: Azure Monitor**

- Introduction to Azure Monitor
- The Pillars of Observability
- Anatomy of Azure Monitor
- Application
- Operation System
- Resources
- Subscription
- Tenant
- Custom Sources
- Data Stores
- Log Analytics Workspaces
- Log Analytics
- Kusto
- Kusto Entities
- Scalar Data Types
- Control Commands
- Functions
- Scalar Operators



- Tabular Operators
- Metrics Explorer
- Alerts
- Dashboards Workbooks

## **Module 17: APIM**

- Introduction to APIM
- Key Concepts
- Echo API Service
- Feature Comparison
- Groups
- Frontends & Backends
- Policies
- Policies Examples
- Policies Walkthrough
- APIs
- OpenAPI
- WADL & WSDL
- Developer Portal
- Developer Portal Authentication
- Built in vs External Cache
- APIM
- APIM Products Subscriptions & Access Keys
- APIM Policies



## **Module 18: Distributed Application Runtime (DAPR), Event Grid and Event Hub**

- Introduction
- Pricing
- Key Concepts
- Scaling
- Event Hub entities
- Producers
- Consumer
- Consumer Groups
- Offsets
- Checkpointing
- Schema Registry





- Kafka Compatibility
- Partitions
- Event Retention
- Azure Event Hub

## **Module 19: Azure Notification Hub**

- Queueing
- Azure Queue Storage

## **Module 20: Azure Service Bus**

- Introduction to Azure Service Bus
- Namespace
- Queues
- Topics
- Subscription
- Dead Letter Queue
- CLI Commands
- Queue

