Full Azure Learning Path for .NET Developers

- Combines: AZ-900 (Fundamentals) + AZ-204 (Developer Associate)

1. Understand Cloud Concepts (AZ-900 + Developer View)

Learn:

What is Cloud Computing? (IaaS, PaaS, SaaS)
Public, Private, Hybrid Cloud
Cloud benefits: scalability, elasticity, agility
Stateful vs Stateless Architecture
App Service vs Functions vs AKS
Containers vs App Service vs Kubernetes

Practice:

Explain real-world IaaS vs PaaS use cases
Deploy .NET Web API to App Service
Convert a console app to Azure Function
Design stateless microservices

2. Azure CLI + Bicep (IaC)

Learn:

az CLI basics (az login, az webapp up)
Bicep: param, resource, module, output
Use Infrastructure as Code (IaC) for .NET deployment

Practice:

CLI deploy: Web App + SQL DB
Bicep template for App Service Plan, Web App, Key Vault

3. Core Azure Services (AZ-900 + AZ-204 Compute)

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<!--
 Type          Services                       Practice
 Compute       App Service, Azure Functions, AKS   Deploy APIs, Timer Functions, Docker, containers
 Storage       Blob, Table, Queue             Upload files, cache data, queue messages
 Database      Azure SQL, Cosmos DB           Use EF Core with SQL, NoSQL with Cosmos
 Identity      Azure AD, B2C, RBAC            Secure APIs, enable SSO
 Monitoring    App Insights, Log Analytics    Add logging/metrics to .NET apps
 Messaging     Service Bus, Event Grid        Triggered microservices
 DevOps        GitHub Actions, Azure DevOps   CI/CD for .NET
 Networking    Front Door, App Gateway, NSG   Public/private routing
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4. Storage Deep Dive (AZ-204)

Learn:

Azure Blob: Upload/download files via SDK
Queue/Table Storage for simple data
Cosmos DB: SQL API, Mongo API

Practice:

File upload API (.NET + Blob)
Process messages via Queue
CRUD on Cosmos DB documents

5. Identity & Security

Learn:

Azure AD: OAuth2, OpenID Connect
Azure AD B2C: Custom login/signup
Managed Identity for resource access
RBAC, NSG, Key Vault, MFA

Practice:

Secure Web API using Azure AD
Access Key Vault from .NET via Managed Identity
Enable MFA, create RBAC policies

6. Monitoring, Logging & Troubleshooting

Learn:

Application Insights (ILogger, TelemetryClient)
Log Analytics + Kusto Query Language (KQL)
Enable diagnostics for services

Practice:

Add App Insights to .NET API
Track performance, failures
Query logs using KQL

7. API Management & Configuration

Learn:

Import APIs into Azure API Management (APIM)
Use Policies: Throttling, Transformation, IP Filters
Azure App Configuration + Feature Flags

Practice:

Publish your Web API via APIM
Add rate-limiting, JWT validation policy
Toggle features using App Configuration

8. Event-Driven & Messaging Solutions

Learn:

Service Bus (queue/topic messaging)
Event Grid (blob upload triggers)
Event Hub (real-time telemetry)

Practice:

Use Service Bus SDK in .NET to publish/consume
Trigger Function from blob upload
Stream telemetry via Event Hub

9. Cost & Governance (AZ-900)

Learn:

Pricing calculator, TCO, SLA
Reserved vs Pay-as-you-go plans
Scaling App Service (B1 vs S1)
Azure Policy, Locks, Blueprints, Compliance (ISO, GDPR)

Practice:

Estimate app cost with calculator
Apply policy to restrict VM size
Lock a resource group to prevent deletion

10. Real Dev Projects You Should Build

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<!--
  Project                        Skills Covered
  Web API + SQL on App Service   Compute, DB, CI/CD
  Timer Function with Email      Azure Functions, SendGrid
  Secure API with AD + APIM      Identity, Gateway, JWT
  Microservice with Service Bus  Messaging, Decoupling
  Upload images to Blob + CDN    Storage, Front Door
  Feature Flags + App Config     Config, App UX toggle
  App Insights + Log KQL         Observability, Logs
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11. Review & Certification

🔄 AZ-900 Review:
Practice Test

🔁 AZ-204 Review:

Mock tests: Whizlabs, MeasureUp, ExamTopics

Practice deployments + real-world patterns

12. Hands-On Lab Summary

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<!--
  Topic                Lab
  .NET Web App         Deploy to App Service
  Azure Function       HTTP + Timer trigger
  Azure CLI            Create resource group, app
  RBAC                 Assign role to app
  Blob Storage         Upload files
  Cosmos DB            CRUD docs
  Service Bus          Publish & consume messages
  App Insights         Monitor logs
  API Management       Secure & expose API
  App Config           Toggle features
  -->
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Final Notes

Focus deeply on App Services, Identity, and Messaging — they are tested heavily in AZ-204.
Secure everything: Use Key Vault, Managed Identity, and AD integration.
Deploy fast: Learn CLI + Bicep to automate your environment.

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Estimated Learning Time Breakdown

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<!--
  Section                                         Learning Time   Hands-On Time   Total
  1. Cloud Concepts & Architecture                3 hrs           1 hr            4 hrs
  2. Azure CLI + Bicep (IaC)                      3 hrs           2 hrs           5 hrs
  3. Core Azure Services (Compute, Storage, DB)   5 hrs           5 hrs           10 hrs
  4. Identity & Security (Azure AD, Key Vault, RBAC)  4 hrs       3 hrs           7 hrs
  5. Monitoring, Logging & KQL                    3 hrs           2 hrs           5 hrs
  6. API Management + App Config                  3 hrs           2 hrs           5 hrs
  7. Messaging (Service Bus, Event Grid)          4 hrs           3 hrs           7 hrs
  8. Cost Management & Governance                 2 hrs           1 hr            3 hrs
  9. Real-World Projects                          —               10-15 hrs       10-15 hrs
  10. Review & Exam Practice                      5 hrs           2 hrs           7 hrs
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Total Estimated Time

- Core learning: 32 hours * 3 = [96_hours]

- Hands-on projects + practice: 29-34 hours * 3 = [87-102_hours]

- Total: ~60-65 hours * 3 = [183-198_hours]

- 1 Week = 5 hours (week day) + 7 hours (weekend) = 12

- Estimated Week: 15-17 weeks => 4-5 month