

Microsoft Azure Cloud Administration – Advanced / DevOps (3 Months)

Duration: 3 Months (~120 Hours)

Mode: Live Online / Classroom

Tools & Technologies: Azure DevOps, GitHub Actions, Terraform, Bicep, AKS, ACR, Azure Functions, App Services, Logic Apps, Azure Monitor

Certifications Prepared: AZ-400: Microsoft Azure DevOps Engineer Expert, AZ-305: Microsoft Azure Solutions Architect Expert

Syllabus

Week 1: Infrastructure as Code (IaC)

- ARM Templates: structure, parameters, deployment
- Bicep language: templates, modules, variables
- Terraform on Azure: providers, state management
- Hands-on: Deploy VM + Storage using Terraform
- Assignment

Week 2: Azure DevOps Basics

- Azure Repos (Git version control)
- Azure Pipelines (build pipelines, YAML vs classic)
- Boards & Agile project tracking
- Test Plans for CI/CD validation
- Hands-on: Create CI pipeline for Node.js application
- Assignment

Week 3: CI/CD & Deployment Strategies

- Continuous Integration vs Continuous Deployment
- Deployment Strategies: Blue-Green, Canary, Rolling
- Deployment Slots for App Services
- GitHub Actions vs Azure Pipelines
- Hands-on: Blue-Green Deployment of WebApp with Pipelines
- Assignment

Week 4: Containers & Kubernetes (AKS)

- Azure Container Registry (ACR) – build & push images
- Azure Kubernetes Service (AKS) setup & scaling
- Helm charts for deployment

- Load balancing containers in AKS
- Hands-on: Deploy Microservices into AKS using Helm
- Assignment
- Mock Interview 1

Week 5: Serverless Computing

- Azure Functions: triggers, bindings, scaling
- Durable Functions (stateful workflows)
- Event Grid vs Service Bus vs Logic Apps
- Hands-on: Event-driven workflow with Azure Functions
- Assignment

Week 6: Monitoring & Security

- Azure Monitor advanced features
- Application Insights with distributed tracing
- Azure Sentinel (SIEM) basics
- Hands-on: Configure Application Insights for WebApp
- Assignment

Week 7: Governance & Cost Management

- Azure Policy, Blueprints for compliance
- Resource tagging & management locks
- Cost analysis, alerts, budgets
- Hands-on: Create governance policy for resource compliance
- Assignment

Week 8: Capstone Project & Interview Prep

- Project: End-to-End CI/CD Pipeline (DevOps → AKS → Functions → Monitoring)
- Resume building tips for DevOps Engineers
- Assignment
- Mock Interview 2

Learning Outcomes

- Implement Infrastructure as Code with ARM, Bicep & Terraform
- Build CI/CD pipelines with Azure DevOps and GitHub Actions
- Deploy and manage microservices using AKS & ACR
- Automate serverless workflows with Azure Functions and Logic Apps

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- Apply monitoring and governance with Azure Monitor & Policy
 - Prepare for AZ-400 and AZ-305 certification exams