

AZURE DEVOPS

COURSE CURRICULUM



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Module 1: Introduction to DevOps

- Traditional Software Development Life Cycle (SDLC)
- Waterfall Model vs Agile Methodology
- What is DevOps?
- DevOps Principles and Practices
- Challenges in Traditional IT
- Benefits of DevOps over Traditional IT
- DevOps Tools Overview
- What is CI and CD?
- DevOps as a Profession – Role of a DevOps Engineer

Module 2: Azure DevOps Fundamentals

- What is Azure DevOps?
- Version History and Evolution
- Azure DevOps Features
- Azure DevOps Tools and Lifecycle
- Creating DevOps Account and Organization
- Creating Projects & Inviting Team Members

Module 3: Azure Boards – Agile Management

- Introduction to Azure Boards
- Work Items: Epic, Feature, User Story, Task, Bug, Test Case
- Linking Work Items
- Team Collaboration & Following Items
- Dashboards & Capacity Planning
- Querying Work Items

I N F O T E K H

Module 4: Git, Azure Repos & GitHub

- Version Control Basics – Git, GitHub & Azure Repos
- Install Git Locally & Configure
- Git Command Basics (Clone, Commit, Push, Pull)
- Branching & Merging
- Pull Requests & Code Review Rules
- Merge Conflicts, Rebase & Cherry-Pick
- Reset, Revert, and .gitignore
- Managing Branch Policies & Permissions
- Branching Workflows:
 - Feature Branching
 - Gitflow
 - Forking

Module 5: Continuous Integration – Build Pipelines

- What is Azure Build Pipeline?
- Creating Pipelines (Classic Editor)
- Continuous Triggers & Status Badges
- Task Groups & Pull Request Validation
- YAML Pipelines Introduction
- Build Triggers & Conditions
- Multi-Platform Build Pipeline
- Publishing Artifacts

Module 6: Quality & Security Integration

- Adding Unit Tests
- Code Coverage using Cobertura
- Test Integration in CI Pipeline
- SonarCloud for Code Quality
- WhiteSource Bolt – Open Source Vulnerability Scan

Module 7: Continuous Deployment – Release Pipelines

- What is CD (Continuous Delivery)?
- Connect Azure Pipeline to Azure Subscription
- Deploy to Azure App Service (Classic + YAML)
- Multi-State Pipelines with Approvals & Gates
- Deploy to Virtual Machines & Azure Functions
- Environment-Specific Deployments

Module 8: Advanced CI/CD Concepts

- Retention Policies
- Build Agents & Agent Pools
- Self-Hosted Agent Setup
- Libraries, Variables & Secure Files
- Pipeline Conditions and Demands

Module 9: UI Testing with Selenium

- Introduction to Functional/UI Testing
- Local Selenium Test Setup
- Integrating UI Tests in Build/Release Pipeline
- Capturing Test Video

Module 10: Azure Key Vault Integration

- Key Vault Introduction
- Secrets vs Keys
- Managed Identity (System/User Assigned)
- Referencing Secrets in ARM Templates & Pipelines

Module 11: SQL Database Deployment

- Creating SQL Projects
- Deployment using DACPAC
- Running SQL Scripts in Azure Pipelines
- Multi-Stage Deployment Approvals

Module 12: Infrastructure as Code – ARM Templates

- Overview of IaC
- Create & Deploy ARM Templates via:
 - Azure Portal
 - PowerShell
 - Azure Pipelines
- Incremental vs Complete Deployment
- Linked Templates & Subscription-Level Deployment

Module 13: Infrastructure as Code – Terraform

- Terraform Overview & Structure
- Terraform Commands
- Run Terraform in Azure Cloud Shell
- Classic & YAML Pipeline Integration

Module 14: Infrastructure as Code – Ansible

- Overview of Ansible & Workflow
- Ansible Components & Installation
- Playbook Structure & Execution

Module 15: Azure Artifacts

- What are Artifacts?
- Publish & Download Build Artifacts
- Working with Feeds and NuGet Packages
- Sharing Packages Publicly

Module 16: Jenkins CI/CD Integration

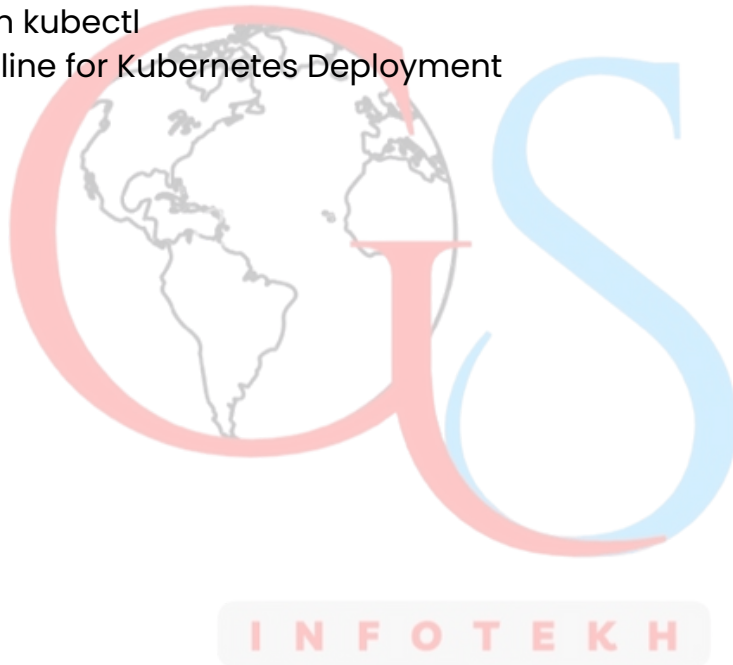
- Jenkins Introduction & Management
- Adding Slave Nodes
- Pipeline as Code using Jenkins
- Delivery Pipeline with Jenkins

Module 17: Containerization with Docker

- Containers vs Virtual Machines
- Docker Architecture
- Create Docker Image
- Push Docker Image to Docker Hub/ACR
- Deploy Container to Azure Web App

Module 18: Kubernetes & AKS

- Kubernetes Overview & Components
- Creating Azure Kubernetes Service (AKS) Cluster
- YAML Files for Deployment & Service
- Deploy with kubectl
- CI/CD Pipeline for Kubernetes Deployment



Thank you



Thank You for Going Through DevOps Curriculum
We hope this guide has provided a clear and structured learning path to strengthen your skills in DevOps.

📌 **NEXT STEPS**

- Start practicing with real-world use cases and hands-on exercises
- Build personal or client-based projects for your portfolio
- Keep exploring updates and best practices in the industry
- Join discussions and stay connected with the community

📞 **Need Help or Guidance?**

Feel free to contact our course support team:
Course Coordinator

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