

# DevOps Engineer Roadmap & AZ-400 Certification Plan

## Month 1: DevOps Foundations

- [ ] Understand DevOps principles and lifecycle
- [ ] Learn Git fundamentals: branching, merging, rebase
- [ ] Practice with GitHub/GitLab
- [ ] CI/CD basics: what, why, and how it works
- [ ] Intro to Jenkins and GitHub Actions
- [ ] Docker fundamentals: build, tag, push, and run images
- [ ] Create a basic CI pipeline with GitHub Actions

## Month 2: Azure DevOps Deep Dive

- [ ] Explore Azure DevOps Services: Boards, Repos, Pipelines, Artifacts
- [ ] Create classic and YAML pipelines
- [ ] Configure build agents and environments
- [ ] Use Azure Repos to host code
- [ ] Track work items with Azure Boards
- [ ] Connect pipeline with Azure App Services for deployment
- [ ] Use variable groups, secrets, and service connections

## Month 3: Infrastructure as Code + Containers

- [ ] Learn Terraform syntax and workflow
- [ ] Provision Azure VMs using Terraform
- [ ] Explore Azure ARM templates (optional)
- [ ] Docker Compose and multi-container setup
- [ ] Intro to Kubernetes (K8s) and cluster components
- [ ] Deploy applications on AKS (Azure Kubernetes Service)
- [ ] Basic Helm chart usage for AKS

## **Month 4: Security, Testing, and Monitoring**

- [ ] Secure DevOps pipeline with Azure Key Vault
- [ ] Integrate secrets into YAML pipelines
- [ ] Implement code quality tools (SonarQube, ESLint)
- [ ] Write unit tests and integrate with CI pipeline
- [ ] Learn about Azure Monitor and Log Analytics
- [ ] Create alerts and dashboards in Azure
- [ ] Understand Azure RBAC and policy management

## **Month 5: AZ-400 Exam Prep + Final Projects**

- [ ] Revisit Microsoft Learn AZ-400 modules
- [ ] Take full-length practice exams (Whizlabs/Udemy)
- [ ] Work on capstone project: Git repo -> CI/CD -> Docker -> AKS -> Monitoring
- [ ] Fix weak areas based on test results
- [ ] Review flashcards: key services, YAML syntax, DevOps terms
- [ ] Schedule and take the AZ-400 certification exam