DEVOPS & CLOUD ENGINEERING

12-Week Industry Training Program · Fingrow

Course Syllabus

Course Overview

This 12-week DevOps training program is designed to take learners from foundational IT concepts to advanced DevOps tools used in real-world environments. The course covers Linux administration, AWS cloud fundamentals, version control using Git and GitHub, containerization with Docker, container orchestration with Kubernetes, Infrastructure as Code using Terraform, and configuration management with Ansible.

12 Weeks	11 Modules	8+ Tools	1 Capstone Project
Duration	Structured Modules	Industry Tools	Real-world Project

Tools & Technologies

AWS	Linux	Git & GitHub	Jenkins	Docker
Kubernetes	Terraform	Ansible	Docker Hub	AWS ECR

Week-by-Week Syllabus

WEEK 1

AWS Cloud Fundamentals

- Introduction to AWS
- AWS global infrastructure (Regions, AZs)
- IAM – users, groups, and roles
- EC2 instances
- EBS volumes
- Security groups and key pairs

WEEK 2

AWS Networking and Storage

- VPC architecture
- Public and private subnets
- Internet Gateway and NAT Gateway
- Route tables
- S3 storage
- Static website hosting in S3

WEEK 3

Linux Fundamentals

- Linux architecture
- Windows vs Linux OS
- Linux distributions
- Basic Linux commands
- File permissions and ownership
- Shell basics

WEEK 4

DevOps Fundamentals

- Introduction to DevOps
- Software Development Life Cycle (SDLC)
- Traditional vs DevOps model
- DevOps lifecycle and culture
- Overview of CI/CD pipeline
- DevOps tools ecosystem

WEEK 5

Version Control with Git & GitHub

- Version control concepts
- Git installation
- Git commands (clone, add, commit, push, pull)
- Branching and merging
- GitHub repositories
- Pull requests and collaboration

WEEK 6

Continuous Integration with Jenkins

- Introduction to CI/CD
- Installing Jenkins
- Jenkins plugins
- Freestyle & Pipeline jobs
- Build triggers
- Connecting Jenkins with GitHub

WEEK 7

Docker Containerization

- Introduction to containers
- Docker architecture
- Docker installation
- Docker images and containers
- Dockerfile creation
- Docker volumes

WEEK 8

Docker Advanced & Image Registry

- Building custom Docker images
- Managing Docker containers
- Docker Compose
- Docker Hub
- AWS Elastic Container Registry (ECR)

WEEK 9

Kubernetes Fundamentals

- Introduction to Kubernetes
- Kubernetes architecture
- Pods, ReplicaSets, Deployments
- Services
- ConfigMaps and Secrets
- Persistent volumes

WEEK 10

Infrastructure as Code with Terraform

- Introduction to IaC
- Terraform architecture
- Terraform installation
- Providers and resources
- Creating AWS infrastructure using Terraform
- Terraform state and modules

WEEK 11

Configuration Management with Ansible

- Introduction to Ansible
- Ad-hoc commands
- Playbooks
- Roles
- Variables
- Ansible Galaxy
- Automating server configuration

Final Capstone Project

Build an end-to-end DevOps Pipeline

Application code stored in GitHub, built using Jenkins CI, containerized with Docker, deployed to Kubernetes on AWS infrastructure provisioned with Terraform, and configured using Ansible.

GitHub	Jenkins	Docker	Kubernetes	AWS (Terraform)	Ansible