

DevOps Essentials Course Outline

Duration: 24–30 Hours

Level: Beginner to Intermediate

Delivery Mode: Online / Offline

Target Audience: Developers, System Admins, IT Professionals, Beginners in DevOps

Module 1: Introduction to DevOps

- What is DevOps?
 - History and Evolution of DevOps
 - Benefits of DevOps in Modern IT
 - DevOps Lifecycle Overview
 - DevOps vs Traditional IT
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Module 2: DevOps Principles and Culture

- Key DevOps Concepts: CI, CD, IaC, Monitoring
 - DevOps Values: CALMS Model (Culture, Automation, Lean, Measurement, Sharing)
 - DevOps Roles and Responsibilities
 - Collaboration Between Dev and Ops Teams
 - Agile, Lean, and ITIL in DevOps
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Module 3: Version Control with Git

- Introduction to Git and GitHub
 - Git Workflow (Clone, Commit, Push, Pull, Branching)
 - Code Collaboration and Merge Conflicts
 - Git Best Practices
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Module 4: Continuous Integration (CI)

- Introduction to CI and Benefits
- CI Tools Overview: Jenkins, GitHub Actions, GitLab CI
- CI Pipeline Setup

- Automated Builds and Testing
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Module 5: Continuous Delivery & Deployment (CD)

- Continuous Delivery vs Continuous Deployment
 - Deployment Strategies (Blue-Green, Canary, Rolling Updates)
 - Tools: Jenkins, CircleCI, GitHub Actions
 - Artifact Repositories (Nexus, JFrog Artifactory)
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Module 6: Infrastructure as Code (IaC)

- What is Infrastructure as Code?
 - Configuration Management Tools (Ansible, Puppet, Chef)
 - IaC Tools: Terraform, AWS CloudFormation
 - Benefits and Best Practices
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Module 7: Containerization Basics

- Introduction to Docker
 - Docker Architecture and Components
 - Creating and Managing Docker Containers
 - Docker Images and Registries
 - Intro to Kubernetes (Optional Overview)
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Module 8: Monitoring and Logging

- Importance of Monitoring in DevOps
 - Tools Overview: Prometheus, Grafana, ELK Stack
 - Metrics Collection and Dashboards
 - Alerting and Log Management
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Module 9: DevOps Toolchain Overview

- DevOps Tool Categories

- Popular DevOps Tools Stack
 - Integrating Tools for CI/CD
 - DevOps Automation Use Cases
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Module 10: DevOps Best Practices and Real-World Scenarios

- Security in DevOps (DevSecOps Introduction)
- Real-World DevOps Pipeline Example
- Common Pitfalls and How to Avoid Them
- DevOps Success Stories