

DevOps Course

Duration: 40 hours

Target Audience:

- This syllabus is designed for individuals with a background in:
 - writing scripts,
 - including LINUX and Windows infrastructure personnel,
 - system administrators, and programmers in 3rd and 4th generation languages.
- The course aims to provide a comprehensive understanding of DevOps principles and practices.

This syllabus provides a structured and comprehensive approach to learning DevOps principles and practices over a 40-hour period. Adjustments can be made based on the specific needs and pace of the participants.

Revolutionize your approach to software development and IT operations. Introducing our comprehensive 40-hour DevOps course designed for individuals with a background in scripting, including LINUX and Windows infrastructure personnel, system administrators, and programmers in 3rd and 4th generation languages.

DevOps is not just a methodology; it's a culture, a set of practices, and a collection of tools that can dramatically improve collaboration, communication, and efficiency across development and operations teams.

In our DevOps course, we delve deep into the fundamental principles, cultural aspects, and cutting-edge tools that define this transformative approach.

Module 1: Introduction to DevOps

- Session 1: Understanding DevOps
 - DevOps fundamentals
 - Evolution of DevOps and its significance
 - Key principles and practices
- Session 2: DevOps Culture and Collaboration
 - Building a DevOps culture
 - Collaborative practices
 - Importance of communication and teamwork
- Session 3: Tools Overview
 - Introduction to popular DevOps tools
 - Version control systems (e.g., Git)
 - Continuous Integration and Continuous Deployment (CI/CD) tools

Module 2: Infrastructure as Code (IaC)

- Session 4: Introduction to IaC
 - Concepts and benefits
 - Tools like Terraform and Ansible
- Session 5: Hands-on IaC
 - Setting up infrastructure with Terraform
 - Configuration management with Ansible
- Session 6: Managing Infrastructure Changes
 - Versioning and collaborating on IaC
 - Best practices for IaC development



Module 3: Continuous Integration (CI)

- Session 7: CI/CD Fundamentals
 - Understanding the CI/CD pipeline
 - Benefits of continuous integration
- Session 8: Jenkins Basics
 - Introduction to Jenkins
 - Setting up a basic CI pipeline
- Session 9: Advanced Jenkins
 - Jenkins plugins and extensions
 - Pipeline as code with Jenkinsfile

Module 4: Continuous Deployment (CD) and Release Management

- Session 10: Introduction to CD
 - Principles of continuous deployment
 - Automating the release process
- Session 11: Deployment Strategies
 - Blue-Green deployments
 - Canary releases
- Session 12: Monitoring and Feedback
 - Implementing monitoring in the CD pipeline
 - Gathering feedback for continuous improvement

Module 5: Containerization and Orchestration

- Session 13: Introduction to Containers
 - Docker fundamentals
 - Container orchestration with Kubernetes
- Session 14: Managing Containers with Kubernetes
 - Deploying applications on Kubernetes
 - Scaling and load balancing
- Session 15: DevOps in Cloud Environments
 - Integrating DevOps practices in cloud platforms (e.g., AWS, Azure, GCP)

Module 6: Security in DevOps

- Session 16: Security Principles in DevOps
 - Understanding DevSecOps
 - Integrating security into the pipeline
- Session 17: Compliance and Auditing
 - Ensuring compliance in DevOps processes
 - Conducting audits
- Session 18: Incident Response and Recovery
 - Developing incident response plans
 - Strategies for recovery and rollback



Module 7: Advanced Topics

- Session 19: Microservices Architecture
 - Introduction to microservices
 - DevOps considerations for microservices
- Session 20: Serverless Computing
 - Basics of serverless architecture
 - Implementing serverless in DevOps
- Session 21: Emerging Trends and Future of DevOps
 - Exploring emerging technologies
 - Preparing for the future in DevOps

Module 8: Final Project and Review

- Session 22: Capstone Project
 - Applying DevOps principles to a real-world scenario
 - Group project and presentation
- Session 23: Review and Q&A
 - Recap of key concepts
 - Addressing participant questions and concerns
- Session 24: Course Conclusion and Certificates
 - Course summary
 - Certificate distribution