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**Course Title**

DevOps Bootcamp

**Course ID**

DEVOPS-701

**Course Level**

Beginner to Intermediate

**Duration**

180 Hours (Bootcamp)

Includes instructor-led training, hands-on labs, DevOps projects, assignments, mock exams, and interview preparation.

**Delivery Mode**

Hybrid / Onsite + Online LMS Support

**Course Description**

This bootcamp provides practical training in DevOps practices and tools used for continuous integration, continuous delivery, and infrastructure automation. Learners will gain hands-on experience with version control, automated builds, containerization, orchestration, and configuration management. The program focuses on industry's best practices to streamline software development, deployment, and operations in real-world environments.

**Course Objectives**

By the end of the course, learners will be able to implement CI/CD pipelines, manage version control with Git, automate application deployment with Docker and Kubernetes, and manage infrastructure with Ansible. Participants will also gain experience in monitoring, troubleshooting, and optimizing DevOps workflows.

**Intended Audience**

This course is suitable for software engineers, system administrators, junior developers, and IT professionals seeking careers in DevOps and cloud-native application deployment.

**Prerequisites**

Basic knowledge of Linux/Windows commands, scripting (Bash, Python), and software development lifecycle (SDLC). A laptop with a minimum i5 processor, 8GB RAM, and virtualization support enabled is required.

**Tools & Platforms**

Git, GitHub/GitLab, Jenkins, Docker, Docker Compose, Kubernetes (Minikube / Kind), Ansible, Linux CLI, monitoring tools overview, and LMS portal for assessments and resources.



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## **Course Outline (Modules & Topics)**

### **Module 1: Introduction to DevOps**

Overview of DevOps culture, principles, and practices. Understanding CI/CD pipelines, version control, infrastructure as code, and benefits of DevOps. Lab includes setting up DevOps environment and exploring toolchains.

### **Module 2: Version Control with Git**

Git basics, repository creation, branching, merging, pull requests, resolving conflicts, and collaboration workflows. Lab includes creating and managing a Git repository and team collaboration exercises.

### **Module 3: Continuous Integration with Jenkins**

Jenkins installation, configuration, job creation, build triggers, pipelines (Declarative & Scripted), plugin management, and pipeline code. Lab includes building automated CI pipelines.

### **Module 4: Containerization with Docker**

Docker architecture, images, containers, Dockerfile, volumes, networks, Docker Compose, and best practices. Lab includes containerizing applications and managing multi-container setups.

### **Module 5: Container Orchestration with Kubernetes**

Kubernetes architecture, pods, deployments, services, config maps, secrets, scaling, and rolling updates. Lab includes deploying containerized applications on Kubernetes cluster (Minikube/Kind).

### **Module 6: Configuration Management with Ansible**

Introduction to Ansible, playbooks, roles, inventory management, variables, tasks, and modules. Lab includes automating system configuration and application deployment with Ansible.

### **Module 7: CI/CD Pipeline Integration**

Integrating Git, Jenkins, Docker, Kubernetes, and Ansible for end-to-end automated deployment. Lab includes building a full DevOps pipeline from code commit to deployment.

### **Module 8: Monitoring, Troubleshooting & Security**

Basics of logging, monitoring, alerts, troubleshooting CI/CD pipelines, container and cluster health checks, and security best practices. Lab includes monitoring applications and troubleshooting deployment issues.

### **Module 9: Capstone Project & Certification Preparation**

End-to-end DevOps project integrating Git, Jenkins, Docker, Kubernetes, and Ansible. Includes pipeline creation, deployment automation, monitoring, mock assessments, and interview preparation.

### **Assessment & Evaluation**

Assessment includes quizzes, lab assignments, DevOps project evaluation, pipeline implementation tasks, and mock certification exams to ensure industry readiness.