

DevOps and Cloud Automation

Introduction

DevOps and Cloud Automation combine development, operations, and cloud technologies to create faster, more reliable, and scalable software delivery processes. By automating workflows, infrastructure, and deployments, organizations improve efficiency, reduce manual errors, and accelerate innovation. This approach emphasizes collaboration, continuous integration and delivery (CI/CD), and the use of cloud platforms to streamline the entire lifecycle of applications—from development to production.

CURRICULUM:

Sr. No.	Contents
1	<p>Introduction to DevOps</p> <ul style="list-style-type: none">• What is DevOps and its importance• DevOps lifecycle and key principles• Overview of Agile and CI/CD pipelines• Version control with Git & GitHub• Setting up a DevOps environment

Sr. No.	Contents
2	<p data-bbox="480 248 855 286">CI/CD Implementation</p> <ul data-bbox="528 331 1374 539" style="list-style-type: none"><li data-bbox="528 331 1374 369">• Introduction to Continuous Integration and Delivery<li data-bbox="528 376 1126 414">• Jenkins setup and pipeline creation<li data-bbox="528 421 1270 459">• GitHub Actions and automated deployments<li data-bbox="528 465 1110 504">• Integrating testing tools into CI/CD<li data-bbox="528 510 1350 539">• Hands-on project: Build and deploy a sample app
3	<p data-bbox="480 654 979 692">Containerization with Docker</p> <ul data-bbox="528 736 1401 945" style="list-style-type: none"><li data-bbox="528 736 967 775">• Introduction to containers<li data-bbox="528 781 1110 819">• Docker installation and commands<li data-bbox="528 826 1179 864">• Building and managing Docker images<li data-bbox="528 871 1227 909">• Docker Compose for multi-container apps<li data-bbox="528 916 1401 945">• Container registries (Docker Hub, GitHub Packages)
4	<p data-bbox="480 1059 1007 1097">Orchestration with Kubernetes</p> <ul data-bbox="528 1142 1321 1395" style="list-style-type: none"><li data-bbox="528 1142 1254 1180">• Introduction to Kubernetes and architecture<li data-bbox="528 1187 1102 1225">• Pods, Deployments, and Services<li data-bbox="528 1232 1126 1270">• ConfigMaps, Secrets, and Volumes<li data-bbox="528 1276 1123 1314">• Kubernetes networking and scaling<li data-bbox="528 1321 1321 1395">• Hands-on mini project: Deploying a web app on Kubernetes

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5	<p>Cloud Platforms and Infrastructure Automation</p> <ul style="list-style-type: none"> • Overview of Cloud Platforms (AWS, Azure, GCP) • Introduction to Infrastructure as Code (IaC) concepts <ul style="list-style-type: none"> ◦ Overview of key AWS Services: ◦ EC2 (Virtual Servers) ◦ S3 (Storage Management) ◦ RDS (Relational Database Service) ◦ VPC (Networking and Security) ◦ IAM (Identity and Access Management) ◦ CloudWatch (Monitoring and Logging) • Automating deployments and scaling using AWS services
6	<p>Monitoring, Security, and Best Practices</p> <ul style="list-style-type: none"> • Monitoring with Prometheus & Grafana • Securing DevOps pipelines and containers • Best practices for DevOps & Cloud Automation • Final project: Complete CI/CD pipeline deployment on cloud

Learning Outcomes:

By the end of this course, participants will be able to:

- Understand DevOps principles, CI/CD pipelines, and automated workflows.
- Gain hands-on skills in cloud platforms such as AWS, Azure, or Google Cloud for deploying
- Learn to use automation tools like Docker, Kubernetes, Terraform, and Jenkins to build scalable, repeatable environments.

Course Benefits:

- Improves efficiency by automating daily tasks.
- Helps build scalable cloud solutions for projects.
- Increases team collaboration and speeds up delivery.

Skill-Wise Earnings:

Skill Level	Avg Monthly Salary
Junior	75k-100k
Mid-Level	100k - 170k
Advanced	250k- 450k
Freelancer	Earn in millions

Affiliation & Collaborations

