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IT SUPPORT

DevOps & Cloud Roadmap & Syllabus

Learn how software is built, tested, shipped and run in production. DevOps engineers automate delivery and keep applications reliable on the cloud.

Linux | Bash | Git | Jenkins / GitHub Actions | Docker | Kubernetes | AWS | Terraform

FRESHERS & STUDENTS	EXPERIENCED (JOB SWITCHERS)	WORKING PROFESSIONALS
5–6 months	**3 months**	**3–6 months (alongside work)**

Durations are approximate and assume about 2–3 hours of focused study a day. Move faster or slower as you need — understanding matters more than speed.

Contents: 1. Freshers & Students · 2. Experienced (Job Switchers) · 3. Working Professionals · 4. Complete Syllabus

Freshers & Students

Starting from the basics and preparing for a first developer job.

Approximate duration: 5–6 months — From Linux basics to deploying a containerised app with a working CI/CD pipeline.

1 Linux, Networking & Scripting — 5 weeks

- Linux commands, permissions and processes
- Networking: ports, DNS, SSH
- Bash scripting for automation

Milestone: Manage a Linux server and automate a routine task with a script.

2 Git & CI/CD — 4 weeks

- Git branching and pull requests
- GitHub Actions or Jenkins pipelines
- Automated build and test

Milestone: Build a pipeline that tests every push automatically.

3

Docker & Kubernetes

6 weeks

- Dockerfiles and Docker Compose
- Kubernetes Deployments, Services, ConfigMaps
- Running a local cluster (minikube or kind)

Milestone: Containerise an app and run it on Kubernetes.

4

Cloud, Project & Interview Prep

5 weeks

- AWS core services: EC2, S3, IAM, VPC
- Deploy your app end to end
- Linux, Docker and Kubernetes interview questions
- Mock interviews

Milestone: Explain your pipeline and deployment in an interview.

Projects to build

- CI/CD pipeline that builds, tests and deploys a web app
- Dockerised multi-service app with Docker Compose
- Kubernetes deployment of an app with a database

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Experienced (Job Switchers)

1–4 years of experience, preparing to switch jobs or move to a stronger role.

Approximate duration: 3 months — For developers, testers and support engineers moving into DevOps, or junior DevOps engineers going deeper.

1

Production CI/CD

3 weeks

- Multi-stage pipelines and environments
- Secrets management
- Blue-green and canary releases

Milestone: Design a safe release process with rollback.

2

Kubernetes in Depth

4 weeks

- Helm charts
- Autoscaling and resource limits
- Ingress and TLS
- Debugging crashing pods

Milestone: Troubleshoot a failing deployment quickly and explain why it failed.

3

Infrastructure as Code

3 weeks

- Terraform modules and remote state
- Provisioning AWS infrastructure
- Ansible for configuration

Milestone: Recreate an environment from code alone.

4

Monitoring & Interview Readiness

2 weeks

- Prometheus, Grafana and alerts
- Incident scenario questions
- Mock interviews with feedback

Milestone: Walk through how you would handle a production incident.

Projects to build

- Terraform-provisioned AWS environment with CI/CD
- Helm chart for a multi-service application
- Monitoring dashboard with alerts for a running app

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Working Professionals

Working developers upskilling toward senior, lead or architect responsibilities.

Approximate duration: 3–6 months (alongside work) — Grow into platform, SRE or cloud architecture responsibilities for a team.

1

Platform Engineering

4–6 weeks

- Internal developer platforms
- GitOps with Argo CD or Flux
- Standardised pipelines and templates

Milestone: Give developers a self-service path to production.

2

Reliability & Security

4–6 weeks

- SLIs, SLOs and error budgets
- DevSecOps: image scanning, policies
- Disaster recovery and backups

Milestone: Define reliability targets and a recovery plan for a service.

3

Cloud Architecture & Cost

4 weeks

- Multi-account and network design
- High availability across zones
- Cost optimisation (FinOps basics)

Milestone: Design a resilient, cost-aware cloud architecture.

4

Leadership & AI in Operations

Ongoing

- Mentoring and runbooks
- Blameless post-incident reviews
- Using AI assistants for logs, scripts and IaC — safely

Milestone: Lead an operations practice for a team.

Projects to build

- GitOps setup for multiple environments
- SLO dashboard with error-budget alerts
- Architecture and cost review of an existing cloud setup

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Complete DevOps & Cloud Syllabus

Everything this track covers, grouped by topic. Use it as a checklist.

01 Linux Fundamentals

- File system and permissions
- Users, groups and sudo
- Processes and services (systemd)
- Package management
- Logs and troubleshooting commands

02 Networking Basics

- IP addresses, ports and protocols
- DNS and HTTP/HTTPS
- SSH and key-based access
- Load balancers and proxies
- Firewalls

03 Scripting

- Bash scripting
- Variables, loops and conditions
- Automating routine tasks
- Python basics for automation

04 Git & Collaboration

- Branching strategies
- Merge vs rebase
- Pull requests and code review
- Tags and releases

05 CI/CD

- Jenkins pipelines
- GitHub Actions workflows
- Build, test and artifact stages
- Environment promotion
- Rollback strategies

06 Docker

- Images, containers and layers
- Writing Dockerfiles
- Volumes and networks
- Docker Compose
- Image security and size

07 Kubernetes

- Pods, Deployments, Services
- ConfigMaps and Secrets
- Ingress
- Health probes and rolling updates
- Helm basics

08 Cloud (AWS)

- EC2, S3, IAM, VPC
- Load balancing and auto scaling
- RDS and managed services
- Cost management
- Security best practices

09 Infrastructure as Code

- Terraform: providers, state, modules
- Ansible basics
- Managing multiple environments

10 Monitoring & Reliability

- Prometheus and Grafana
- Centralised logging
- Alerting
- SLIs, SLOs and incident response

Roles this track prepares you for

DevOps Engineer · Cloud Engineer · Site Reliability Engineer (SRE) · Platform Engineer

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Want a personal plan or interview preparation?

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Roadmaps are for learning guidance and do not guarantee jobs or placements.

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