COURSE SYLLABUS

GCP DevOps Course Syllabus

1 Course Overview

Learn GCP DevOps, including Linux, Git, CI/CD pipelines, Docker, Kubernetes, Terraform, and Google Cloud DevOps services such as Cloud Build, Artifact Registry, GKE, and Cloud Run. Gain practical skills to automate builds, deployments, and infrastructure on Google Cloud.

Companies running applications on Google Cloud need engineers who can automate releases, manage infrastructure as code and keep systems reliable. GCP DevOps combines DevOps practices with Google Cloud services, and Google's strength in Kubernetes and site reliability engineering makes it a strong career choice.

2 Course Highlights

- DevOps tools combined with Google Cloud services in one course
- Hands-on pipelines, GKE, Cloud Run and infrastructure as code on GCP
- Hands-on practice with assignments in every module
- Resume building, mock interviews and placement guidance

3 Who Can Join

- Students and fresh graduates who want to start a career in this field
- Working professionals planning a career switch or upskilling
- Developers and IT staff who want to add new skills
- Freelancers and entrepreneurs who want practical, job-ready knowledge

4 Course Syllabus

The course is divided into 7 modules. Each module combines concept sessions with hands-on practice.

MODULE 1 DevOps Fundamentals, Linux and Shell Scripting

- DevOps culture, lifecycle and benefits
- Agile and DevOps overview
- Linux commands, file system and permissions
- Package management and process control
- Networking basics for DevOps
- Shell scripting fundamentals
- Automating tasks with scripts and cron

MODULE 2 Google Cloud Essentials for DevOps

- Cloud computing and Google Cloud global infrastructure
- Projects, billing and resource hierarchy
- IAM roles, service accounts and least privilege
- Compute Engine virtual machines and instance groups
- Cloud Storage and Cloud SQL
- VPC networks, firewall rules and load balancing
- Cloud Shell, gcloud CLI and cost management

MODULE 3 Git, GitHub and Build Tools

- Version control concepts and Git commands
- Branching, merging and resolving conflicts
- GitHub workflow and pull requests
- Branching strategies
- Maven and build automation
- Artifact management with Artifact Registry
- Code quality with SonarQube

MODULE 4 CI/CD with Jenkins, Cloud Build and Cloud Deploy

- CI/CD concepts and pipeline stages
- Jenkins setup, jobs and Jenkinsfile
- GitHub Actions workflows
- Google Cloud Build triggers and cloudbuild.yaml
- Cloud Deploy delivery pipelines
- Automated testing in pipelines
- Blue-green, rolling and canary deployments

MODULE 5 Docker, Kubernetes, GKE and Cloud Run

- Containers vs virtual machines
- Docker images, containers and Dockerfiles
- Docker Compose and Artifact Registry
- Kubernetes architecture, pods and deployments
- Services, ConfigMaps, Secrets and Ingress
- Google Kubernetes Engine (GKE) clusters and autoscaling
- Serverless containers with Cloud Run

MODULE 6 Infrastructure as Code: Terraform and Ansible

- Infrastructure as Code concepts
- Terraform providers, state and modules
- Provisioning GCP resources with Terraform
- Remote state with Cloud Storage
- Ansible playbooks and roles
- Configuration management best practices
- Managing dev, test and production environments

MODULE 7 Monitoring, SRE, Security and Real-World Projects

- Cloud Monitoring, Cloud Logging and alerts
- Prometheus and Grafana overview
- SRE concepts: SLIs, SLOs and error budgets
- DevSecOps: vulnerability scanning and Secret Manager
- End-to-end CI/CD project on Google Cloud
- Troubleshooting and cost optimization
- Resume and interview preparation

5 Tools and Technologies Covered

Linux, Shell scripting, Git and GitHub, Jenkins, Google Cloud Build, Cloud Deploy, Artifact Registry, Docker, Kubernetes (GKE), Cloud Run, Terraform, Ansible, Cloud Monitoring and Logging, Prometheus and Grafana, gcloud CLI.

6 Hands-On Projects

CI/CD Pipeline on GCP	Automated build, test and deploy using Cloud Build.
Dockerized App on Cloud Run	Container image in Artifact Registry deployed serverlessly.
Kubernetes Deployment on GKE	Scalable application with Ingress and autoscaling.
Infrastructure as Code Project	VPC, VMs and GKE cluster created with Terraform.

7 Learning Outcomes

- Understand DevOps culture, tools and workflows.
- Work confidently on Linux and write shell scripts.
- Use core Google Cloud services for DevOps work.
- Build automated CI/CD pipelines with Cloud Build and Jenkins.
- Containerize and deploy applications with Docker, GKE and Cloud Run.
- Automate infrastructure with Terraform and monitor systems on GCP.

8 Career Opportunities

- GCP DevOps Engineer
- DevOps Engineer
- Cloud Engineer
- Site Reliability Engineer
- Build and Release Engineer
- Platform Engineer

9 Course Details

Duration	As per course schedule
Level	Beginner to Advanced
Mode	Online / Classroom
Prerequisites	Basic computer knowledge
Certification	Course completion certificate
Support	Placement assistance and interview preparation

10 Frequently Asked Questions

Do I need prior experience to join?

No. The course starts from the basics, so beginners can join. The prerequisite listed in the course details is enough.

Will I get hands-on practice?

Yes. Every module includes practical sessions, assignments and a real-world project.

Do you provide placement support?

Yes. We provide resume building, mock interviews and placement guidance.

Can I attend online?

Yes. The course is available in both online and classroom modes.

11 Contact Information

INSTITUTE NAME	Yuva Sakthi Academy
WEBSITE	https://yuvasakthiacademy.com/
CONTACT NUMBER	+91 95976 84055
EMAIL	yuvasakthiacademy1234@gmail.com