

Google Cloud Professional DevOps Engineer Outline

Duration: (5 day, 8 hrs/day)

Pre-requisites: Associate Cloud Engineer

Course Overview:

A Professional Cloud DevOps Engineer is responsible for efficient development operations that can balance service reliability and delivery speed. They are skilled at using Google Cloud to build software delivery pipelines, deploy and monitor services, and manage and learn from incidents.

After completing this course, participants will be able to:

1. Acquire knowledge on developing and deploying software delivery pipelines as well as managing and monitoring various CI/CD services.
2. Attain skills required to clear the GCP Professional DevOps Engineer Certification Exam

Module No		
1	Google Cloud Fundamentals: Core Infrastructure	
	1	Introducing Google Cloud
	2	Resources and Access in the Cloud
	3	Virtual Machines and Networks in the Cloud
	4	Storage in the Cloud
	5	Containers in the Cloud
	6	Applications in the Cloud
	7	Developing and Deploying in the Cloud
	8	Logging and Monitoring in the Cloud
	Hands-on	
	1	Cloud Storage: Qwik Start - Cloud Console
	2	Cloud Storage: Qwik Start - CLI/SDK
	3	Cloud IAM: Qwik Start

Module No	Module Name	
1	Hands-on	
	4	Cloud Monitoring: Qwik Start
	5	Cloud Functions: Qwik Start - Console
	6	Cloud Functions: Qwik Start - Command Line
	7	Google Cloud Pub/Sub: Qwik Start - Console
	8	Google Cloud Pub/Sub: Qwik Start - Command Line
	9	Google Cloud Pub/Sub: Qwik Start - Python
2	Developing a Google SRE Culture	
	1	DevOps, SRE, and Why They Exist
	2	SLOs with Consequences
	3	Make Tomorrow Better than Today
	4	Regulate Workload
	5	Apply SRE in Your Organization
3	Reliable Google Cloud Infrastructure: Design and Process	
	1	Defining Services
	2	Microservice Design and Architecture
	3	DevOps Automation
	4	Choosing Storage Solutions
	5	Google Cloud and Hybrid Network Architecture
	6	Deploying Applications to Google Cloud
	7	Designing Reliable Systems
	8	Security
	9	Maintenance and Monitoring
	Hands-on	
	1	Cloud Source Repositories: Qwik Start
	2	Managing Deployments Using Kubernetes Engine
	3	Troubleshooting Workloads on GKE for Site Reliability Engineers

Module No	Module Name	
3	Hands-on	
	4	Continuous Delivery with Jenkins in Kubernetes Engine
	5	Troubleshooting Workloads on GKE for Site Reliability Engineers
	6	Identifying and Resolving Application Latency for Site Reliability Engineers
	7	Debugging Applications for Site Reliability Engineers
	8	Using Cloud Error Reporting to Remediate Workload Issues on GKE
4	Logging, Monitoring and Observability in Google Cloud	
	1	Introduction to Monitoring in Google Cloud
	2	Avoiding Customer Pain
	3	Alerting Policies
	4	Monitoring Critical Systems
	5	Configuring Google Cloud Services for Observability
	6	Advanced Logging and Analysis
	7	Monitoring Network Security and Audit Logs
	8	Managing Incidents
	9	Investigating Application Performance Issues
	10	Optimizing the Costs of Monitoring
	Hands-on	
	1	Cloud Monitoring: Qwik Start
	2	Monitoring Multiple Projects with Cloud Monitoring
	3	Monitoring and Logging for Cloud Functions
	4	Reporting Application Metrics into Cloud Monitoring
	5	Creating and Alerting on Logs-based Metrics
	6	Autoscaling an Instance Group with Custom Cloud Monitoring Metrics



Module No	Module Name	
5	Getting Started with Terraform for Google Cloud	
	1	Introduction to Terraform for Google Cloud
	2	Terms and Concepts
	3	Writing Infrastructure Code for Google Cloud
	4	Organizing and Reusing Configuration with Terraform Modules
	5	Introduction to Terraform State
	Hands-on	
	1	Terraform Fundamentals
	2	Infrastructure as Code with Terraform
	3	Interact with Terraform Modules
	4	Managing Terraform State
	5	Deploy Kubernetes Load Balancer Service with Terraform