

Cloud Engineer

Course Outline

Module 1: Preparing for Your Associate Cloud Engineer Journey

- Introduction
- Setting Up a Cloud Solution Environment
- Planning and Configuring a Cloud Solution
- Deploying and Implementing a Cloud Solution
- Ensuring Successful Operation of a Cloud Solution
- Configuring Access and Security

Module 2: Google Cloud Fundamentals: Core Infrastructure Theory

- Introducing Google Cloud
- Resources and Access in the Cloud
- Virtual Machines and Networks in the Cloud
- Storage in the Cloud
- Containers in the Cloud
- Applications in the Cloud
- Developing and Deploying in the Cloud
- Logging and Monitoring in the Cloud

Hands-On

- A Tour of Google Cloud Hands-on Labs
- Compute Engine: Qwik Start - Windows
- Getting Started with Cloud Shell and gcloud

Module 3: Essential Google Cloud Infrastructure: Foundation Theory

- Interacting with Google Cloud
- Virtual Networks
- Virtual Machines

Hands-On

- Creating a Virtual Machine
- Set Up Network and HTTP Load Balancers

Module 4: Essential Google Cloud Infrastructure: Core Services Theory

- Introduction
- Identity and Access Management (IAM)
- Storage and Database Services
- Resource Management
- Resource Monitoring

Hands-On

- Cloud Storage: Qwik Start - Cloud Console
- Cloud Storage: Qwik Start - CLI/SDK
- Cloud IAM: Qwik Start

- Cloud Monitoring: Qwik Start

Module 5: Elastic Google Cloud Infrastructure: Scaling and Automation

Theory

- Introduction
- Interconnecting Networks
- Load Balancing and Autoscaling
- Infrastructure Automation
- Managed Services

Hands-On

- Multiple VPC Networks
- Introduction to SQL for BigQuery and Cloud SQL

Module 6: Reliable Google Cloud Infrastructure: Design and Process

Theory

- Introduction
- Defining Services
- Microservice Design and Architecture
- DevOps Automation
- Choosing Storage Solutions
- Google Cloud and Hybrid Network Architecture
- Deploying Applications to Google Cloud
- Designing Reliable Systems
- Security
- Maintenance and Monitoring

Hands-On

- Cloud Functions: Qwik Start - Console
- Google Cloud Pub/Sub: Qwik Start - Console
- Google Cloud Pub/Sub: Qwik Start - Command Line
- Deployment Manager - Full Production [ACE]

Module 7: Getting Started with Google Kubernetes Engine

Theory

- Introduction to Google Cloud
- Introduction to Containers and Kubernetes
- Kubernetes Architecture
- Introduction to Kubernetes Workloads

Hands-On

- Kubernetes Engine: Qwik Start
- Managing Deployments Using Kubernetes Engine

Module 8: Getting Started with Terraform for Google Cloud

Theory

- Introduction to Terraform for Google Cloud
- Terms and Concepts
- Writing Infrastructure Code for Google Cloud
- Organizing and Reusing Configuration with Terraform Modules

- Introduction to Terraform State

Hands-On

- Terraform Fundamentals
- Infrastructure as Code with Terraform
- Interact with Terraform Modules
- Managing Terraform State

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