

# Google Cloud - Google Kubernetes Engine for Developers Essentials

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**Course Number: GCP-GKEDEVES-ES**

**Duration: 0.375 days**

## Overview

## Course Description

This course provides a comprehensive introduction to Google Kubernetes Engine (GKE) and its essential concepts for cloud developers. Participants will explore containerization with Docker, Kubernetes architecture, and GKE deployment best practices. The course includes hands-on activities and demos to facilitate practical understanding and skill development in deploying and managing containerized applications on Google Cloud.

## Skills Gained

- Understand the fundamentals of containers and Kubernetes.
- Learn to build Docker images and apply best practices.
- Gain knowledge of Kubernetes architecture and object management.
- Master Kubernetes deployment strategies and best practices on GKE.

## Who Can Benefit

Cloud developers seeking to deploy and manage containerized applications on Google Cloud.

## **Prerequisites**

Basic cloud computing concepts, software development experience.

## **Audience**

## **Course Details**

### **Introduction to Containers and Kubernetes**

#### Introduction to Containers

- What are containers and why use them?
- Containerization vs. Virtualization
- Benefits of using containers

#### Introduction to Docker

- What is Docker and its components?
- Docker images and containers
- Dockerfile basics and instructions

#### Building Docker Images

- Hands-on: Building a Docker image with Python
- Hands-on: Building a Docker image with Java using Maven

### **Kubernetes Deployments and Best Practices**

#### Kubernetes Architecture

- Kubernetes cluster components
- Pods, Deployments, Services, and Namespaces
- Kubernetes object management

#### Kubernetes Deployment Best Practices

- Creating and managing Deployments
- Rolling updates and rollbacks
- Health checks and probes (Liveness, Readiness, Startup)

#### Securing Kubernetes Deployments

- Kubernetes security best practices