

# Architecting with Google Compute Engine

Preparing for the [Professional Google Cloud Architect](#)

Course Fee: HK\$10,800 (May apply up to HK\$7,200 subsidy)

\*Maximum saving, with the final grant subjects to approval.



This course will familiarise participants with Google Cloud's flexible infrastructure and platform services, with a specific focus on Compute Engine. We use a combination of lectures, demos, and hands-on labs to explore and deploy solution elements, including infrastructure components like networks, systems, and application services. Participants will also learn how to deploy practical solutions such as secure interconnecting networks, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring.

## Objectives

- ❖ Configure VPC networks, virtual machines, load balancers and autoscaling for VM instances.
- ❖ Administer Identity and Access Management for resources
- ❖ Implement data storage services in GCP
- ❖ Manage and examine billing of GCP resources
- ❖ Monitor resources using Stackdriver services
- ❖ Connect your infrastructure to GCP
- ❖ Automate the deployment of GCP infrastructure services
- ❖ Leverage managed services in GCP

Programme code

10012208

Duration and time

3 days  
9:30-17:00

Venue

1/F, HKPC Building  
78 Tat Chee Avenue, Kowloon Tong

Medium

Cantonese, supplemented with English terminology

Course fee

HK\$ 10,800  
(apply up to HK\$7,200 subsidy)

Prerequisites

- Have completed Google Cloud Platform Fundamentals: Core Infrastructure or have equivalent experience.
- Have basic proficiency with command-line tools and Linux operating system environments.
- Have systems operations experience, including deploying and managing applications, either on-premises or in a public cloud environment.



## Course Outline with highlights

### Module 1: Introduction to Google Cloud

- List the different ways of interacting with Google Cloud.
- Use the Cloud Console, Cloud Shell and the Google Cloud Marketplace to deploy solutions.
- Create Cloud Storage buckets.

### Module 2: Virtual Networks

- List the VPC objects in Google Cloud.
- Differentiate between the different types of VPC networks.
- Implement VPC networks and firewall rules.
- Implement Private Google Access and Cloud NAT.

### Module 3: Virtual Machines

- Describe the disk options for virtual machines.
- Explain VM pricing and discounts.
- Use Compute Engine to create and customize VM instances.

### Module 4: CloudIAM

- Describe the Cloud IAM resource hierarchy.
- Explain the different types of IAM roles.
- Recall the different types of IAM members.
- Implement access control for resources using Cloud IAM.

### Module 5: Storage and Database Services

- Differentiate between Cloud Storage, Cloud SQL, Cloud Spanner, Cloud Firestore and Cloud Bigtable.
- Choose a data storage service based on your requirements.
- Implement data storage services.

### Module 6: Resource Management

- Describe the cloud resource manager hierarchy.
- Recognize how quotas protect Google Cloud customers.

- Use labels to organize resources.
- Explain the behavior of budget alerts in Google Cloud.
- Examine billing data with BigQuery.

### Module 7: Resource Monitoring

- Describe the services for monitoring, logging, error reporting, tracing, and debugging.
- Create charts, alerts, and uptime checks for resources with Cloud Monitoring.
- Use Cloud Debugger to identify and fix errors.

### Module 8: Interconnecting Networks

- Determine which Google Cloud interconnect or peering service to use in specific circumstances.
- Create and configure VPN gateways.
- Recall when to use Shared VPC and when to use VPC Network Peering.

### Module 9: Load Balancing and Autoscaling

- Recall the various load balancing services.
- Determine which Google Cloud load balancer to use in specific circumstances.
- Describe autoscaling behavior.
- Configure load balancers and autoscaling.

### Module 10: Infrastructure Modernization

- Automate the deployment of Google Cloud services using Deployment Manager or Terraform.
- Outline the Google Cloud Marketplace.

### Module 11: Managed Services

- Describe the managed services for data processing in Google Cloud.

#### Bring Your Own Device (BYOD):

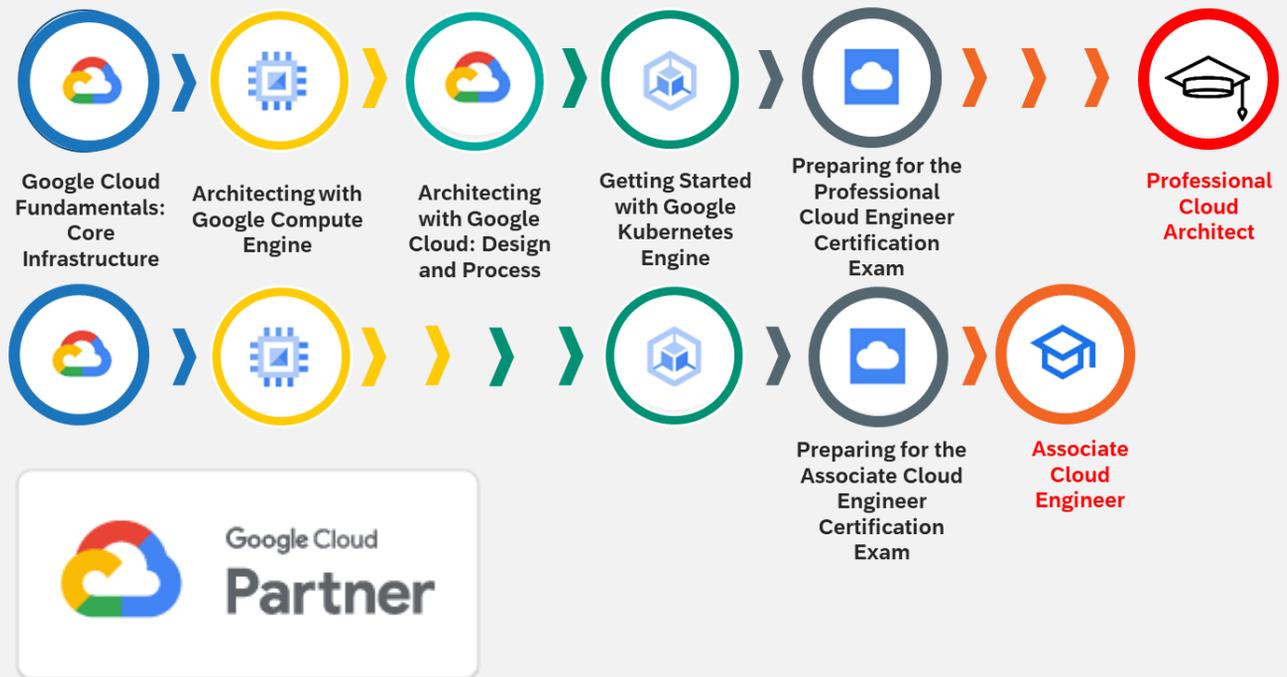
Windows 7/10 / Mac OS 10.x or above with minimum 2 GB RAM and 20 GB hard disk

This course will be taught by Google Cloud Authorized Trainer.

## Who Should Attend?

- ✓ Cloud Solutions Architects, DevOps Engineers
- ✓ Individuals using Google Cloud Platform to create new solutions or to integrate existing systems, application environments, and infrastructure, with a focus on Compute Engine

## Google Cloud Technical Learning Path



## Enrolment Methods

1. Scan the QR code to complete the enrolment and payment online OR
2. Mail the crossed cheque with payee name “Hong Kong Productivity Council” (in HK dollar) to HKPC Academy, Hong Kong Productivity Council, 3/F, HKPC Building, 78 Tat Chee Avenue, Kowloon (attention to Mr Desmond CHAN). Please indicate the course name and course code on the envelope.



[Enrolment Link](#)

## Supporting Organisations (In arbitrary order)

