

# Architecting with Google Cloud: Design and Process

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



Course Fee: HK\$8,100 (May apply up to HK\$5,400 subsidy)

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



This course features a combination of lectures, design activities, and hands-on labs to show participants how to use proven design patterns on Google Cloud to build highly reliable and efficient solutions and operate deployments that are highly available and cost-effective.

## Objectives

- ❖ Define application requirements and express them objectively as KPIs, SLO's and SLI's
- ❖ Decompose application requirements to find the right microservice boundaries
- ❖ Leverage Google Cloud developer tools to set up modern, automated deployment pipelines
- ❖ Choose the appropriate Google Cloud Storage services based on application requirements
- ❖ Architect cloud and hybrid networks
- ❖ Monitor service level objectives and costs using Stackdriver tools

Programme code	10012208
Duration and time	2 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\$8,100 (May apply up to HK\$5,400 subsidy)
Prerequisites	<p>This course was created for those who have already completed the Architecting with Google Compute Engine or Architecting with Google Kubernetes Engine course or have equivalent experience.</p> <p>Participants should have basic proficiency with command-line tools and systems operations experience, including deploying and managing applications, either on-premises or in a public cloud environment.</p>



## Course Outline with highlights

### Module 1: Defining the Service

- Write qualitative requirements with user stories, quantitative requirements using key performance indicators (KPIs) and Evaluate KPIs using SLOs and SLIs.

### Module 2: Microservice Design and Architecture

- Decompose monolithic applications into microservices and recognize appropriate microservice boundaries.
- Implement services using 12-factor best practices and Build loosely coupled

### Module 3: DevOps Automation

- Automate service deployment using CI/CD pipelines and builds Leverage Cloud Source Repositories for source and version control.
- Create infrastructure with code using Deployment Manager and Terraform.

### Module 4: Choosing Storage Solutions

- Store binary data with Cloud Storage, NoSQL data using Firestore and Cloud Bigtable.
- Cache data for fast access using Memorystore.
- Build a data warehouse using BigQuery.

### Module 5: Google Cloud and Hybrid Network Architecture

- Design VPC networks
- Configure global and regional load
- Leverage Cloud CDN to provide lower latency and decrease network egress.
- Create hybrid networks between Google Cloud and on-premises data centers

### Module 6: Deploying Applications to Google Cloud

- Choose the appropriate Google Cloud deployment service for your applications.
- Configure scalable, resilient infrastructure using Instance Templates and Groups.
- Orchestrate microservice deployments using Kubernetes and GKE.
- Leverage App Engine for a completely automated platform as a service (PaaS).
- Create serverless applications

### Module 7: Designing Reliable Systems

- Implement fault-tolerant systems by avoiding single points of failure, correlated failures, and cascading failures.
- Design resilient data storage with lazy deletion.
- Analyze disaster scenarios and plan for disaster recovery using cost/risk analysis.

### Module 8: Security

- Leverage Cloud Security Command Center to help identify vulnerabilities.
- Secure people using IAM roles, Identity-Aware Proxy, and Identity Platform.
- Mitigate DDoS attacks by leveraging Cloud DNS and Cloud Armor.

### Module 9: Maintenance and Monitoring

- Forecast, monitor, and optimize service cost Use Uptime Checks to determine service availability.

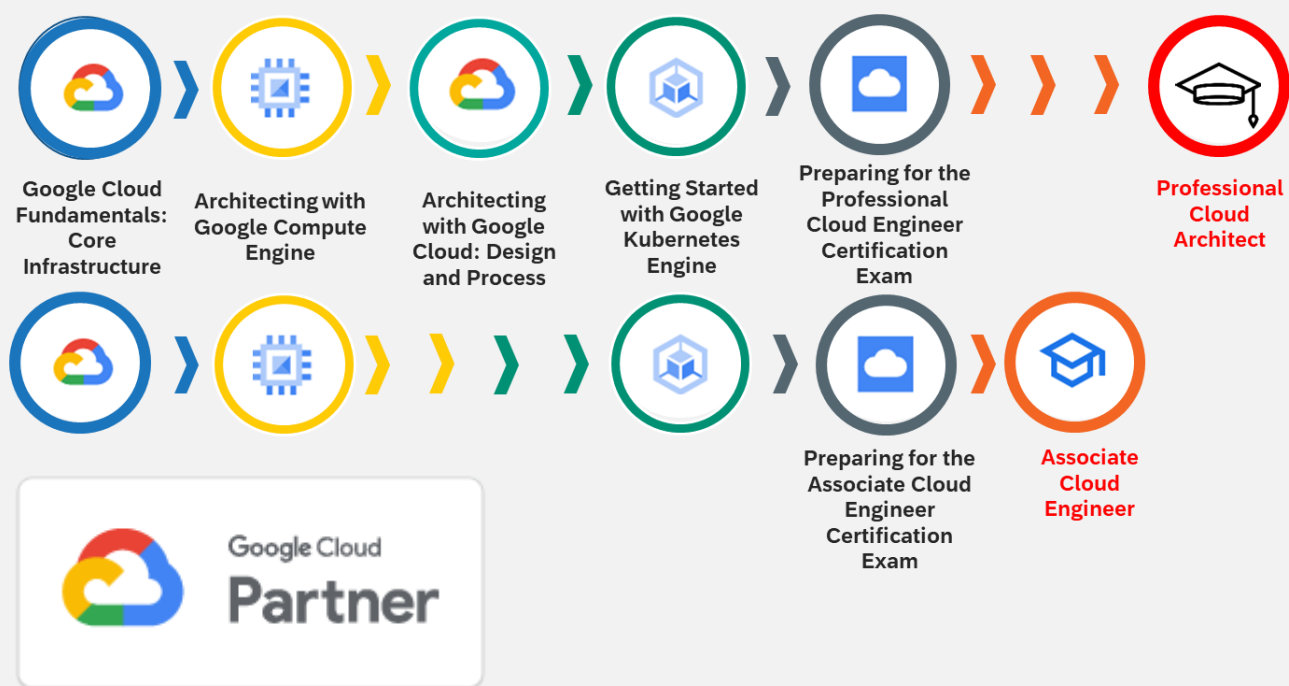
**Bring Your Own Device (BYOD):** Windows 7/10 / Mac OS 10.x or above with minimum 2 GB RAM and 20 GB hard disk

This course will be taught by Google Cloud Authorized Trainer.

## Who Should Attend?

- ✓ Cloud Solutions Architects, Site Reliability Engineers, Systems Operations professionals, DevOps Engineers, IT managers
- ✓ Individuals using Google Cloud Platform to create new solutions or to integrate existing systems, application environments, and infrastructure with the Google Cloud Platform

## 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)

