

Course Syllabus

Welcome

Welcome to GoogleX's **Google Cloud Computing Foundations: Infrastructure in Google Cloud** course. This is the second of four courses required for the Google Cloud Computing Foundations Program certificate.

Course Description

The Google Cloud Computing Foundations courses help build cloud literacy for individuals who have little to no background or experience in cloud computing. They provide an overview of concepts central to cloud infrastructure, application development, big data, and machine learning, and where and how Google Cloud fits in.

This is the second course in a four-course series called Google Cloud Computing Foundations. The courses should be completed in the following order:

1. Google Cloud Computing Foundations: Cloud Computing Fundamentals
- 2. Google Cloud Computing Foundations: Infrastructure in Google Cloud**
3. Google Cloud Computing Foundations: Networking and Security in Google Cloud
4. Google Cloud Computing Foundations: Data, ML, and AI Google Cloud

This second course reviews implementing storage models, different application managed service options, and security administration in Google Cloud. By the end of the series of courses, learners will be able to articulate these concepts and demonstrate some hands-on skills.

Course Objectives

After completing this course, you will be able to:

- Implement a variety of structured and unstructured storage models.
- Discuss the different application-managed service options in the cloud.
- Outline how security in the cloud is administered in Google Cloud.

Prerequisites

- Google Cloud Computing Foundations: Cloud Computing Fundamentals.

Time Commitment

1 week, spending 5-6 hours.

Course Syllabus

This course is arranged in 3 modules. We estimate that you will need to spend at least 5-6 hours to complete the course. The course is self-paced, so you have the flexibility to complete modules in your own time.

Module 4 - Where Do I Store This Stuff?

- Introduction
- Storage Options in the Cloud
- Structured and Unstructured Storage in the Cloud
- Unstructured Storage using Cloud Storage
- Lab Intro: Cloud Storage - Qwikstart - CLI/SDK
- Lab - Cloud Storage: Qwik Start - CLI/SDK (verified users only)
- SQL Managed Services
- Exploring Cloud SQL
- Lab Intro - Cloud SQL for MySQL: Qwik Start
- Lab - Cloud SQL for MySQL: Qwik Start (verified users only)
- Cloud Spanner as a Managed Service
- NoSQL Managed Services Options
- Firestore, a NoSQL Document Store
- Bigtable as a NoSQL Option
- Quiz (Knowledge Check) - Where Do I Store This Stuff?
- Summary

Module 5 - There's an API for That!

- Introduction
- The Purpose of APIs
- Cloud Endpoints

- Lab Intro - Cloud Endpoints - Qwik Start
- Lab - Cloud Endpoints: Qwik Start
- Apigee Edge
- Pub/Sub
- Lab Intro: Google Cloud Pub/Sub - Qwik Start - Python
- Lab - Google Cloud Pub/Sub - Qwik Start - Python (verified users only)
- Quiz (Knowledge Check) - There's an API for That!
- Summary

Module 6 - You Can't Secure the Cloud, Right?

- Introduction
- Security in the Cloud
- The Shared Security Model
- Encryption Options
- Authentication and Authorization with IAM
- Lab Intro - User Authentication: Identity-Aware Proxy
- Lab - User Authentication: Identity-Aware Proxy (verified users only)
- IAM authorization best practices
- Lab Intro - Cloud IAM: Qwik Start
- Lab - Cloud IAM: Qwik Start (verified users only)
- Quiz (Knowledge Checks) - You Can't Secure the Cloud Right?
- Summary

Assessment Summary

Learners will need to gain 75% or above to successfully pass this course. The assessment breakdown is as follows.

Assessment Type	% of Final Grade	Due Date
Labs	100%	By course finish

Please note:

- There are 6 labs in the course.
- The labs are for verified users only and there is a set time limit to complete each lab.
- You can complete the labs at any time while the course is open, however we do recommend that you complete them sequentially, after you complete the relevant module.