

Google Cloud Platform (GCP) Fundamentals

Course Duration: 8 weeks

Who Should Enroll:

Cloud engineers, system administrators, software developers, data analysts, IT professionals, and students interested in cloud computing. No prior cloud experience required.

Eligibility:

Basic understanding of IT concepts, networking fundamentals, and operating systems required. No GCP experience necessary.

Medium of Instruction:

English (with Hindi support available)

Curriculum Overview

Module 1: Cloud Computing & GCP Basics

- What is Cloud Computing
- Cloud Models: IaaS / PaaS / SaaS
- Introduction to Google Cloud Platform
- Creating a GCP Account
- Free Tier and GCP Credits
- GCP Console Basics
- Projects & Billing
- Resource Management Basics

Module 2: Core GCP Compute Services

- Compute Engine (VM Basics)
- App Engine Introduction
- Cloud Functions Basics
- Kubernetes Engine (GKE) Basics
- Instance Groups

- Auto-Scaling
- Deploying a Web App (Hands-on)

3: Storage & Database Solutions

- Cloud Storage Basics
- Storage Classes
- Cloud SQL (Relational DB)
- Cloud Fire store (NoSQL DB)
- Cloud Bigtable (Big Data DB)
- Backup Strategies
- Disaster Recovery

Module 4: Networking & Security

- VPC Basics
- Subnets
- Firewall Rules
- Routes
- Load Balancing
- CDN Basics
- IAM (Identity and Access Management)
- Security Best Practices
- DDoS Protection



Module 5: Data Analytics & Machine Learning

- Big Query Basics
- Dataflow (ETL Pipelines)
- Pub/Sub Basics
- Intro to AI/ML on GCP

- Vertex AI Basics
- Pre-trained ML Models

Module 6: Monitoring & Optimization

- Cloud Monitoring
- Cloud Logging
- Log Analysis
- Cost Optimization
- Performance Tuning
- Capstone Project (Multi-Tier App)
- Best Practices

