

CSG201:GOOGLE CLOUD COMPUTING FUNDAMENTALS

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

- CO1 :: define the purpose and value of Google Cloud products and services
- CO2 :: describe how infrastructure is organized and controlled in Google Cloud
- CO3 :: examine how to create basic infrastructure in Google Cloud
- CO4 :: demonstrate the storage options used in Google Cloud
- CO5 :: outline the purpose and value of Google Kubernetes Engine
- CO6 :: evaluate the use cases for serverless Google Cloud services

Unit I

Introducing Google Cloud : Cloud computing overview, IaaS and PaaS, The Google Cloud network, Environmental impact, Security, Open source ecosystems, Pricing and billing

Unit II

Resources and Access in the Cloud : Google Cloud resource hierarchy, IAM, IAM roles, Service accounts, Cloud Identity, Interacting with Google Cloud

Unit III

Virtual Machines and Networks in the Cloud : Virtual Private Cloud networking, Compute Engine, Scaling virtual machines, Important VPC compatibilities, Cloud Load Balancing, Cloud DNS and Cloud CDN, Connecting networks to Google VPC

Unit IV

Storage in the Cloud : Cloud Storage, Cloud SQL, Cloud Spanner, Firestore, Cloud Bigtable, Comparing storage options

Unit V

Containers in the Cloud : Introduction to containers, Kubernetes, Google Kubernetes Engine

Unit VI

Applications in the Cloud : Cloud Run, Cloud Function

List of Practicals / Experiments:

List of Practicals

- Getting Started with Cloud Marketplace
- Getting Started with VPC Networking and Google Compute Engines
- Getting Started with Cloud Storage and Cloud SQL
- Run hello cloud in cloud platform
- Deploy a basic infrastructure to Google Cloud
- Deploy an application that uses Cloud SQL and Cloud Storage
- Deploy a containerized application on Cloud Run
- Deploy a kubernetes engine

References: 1. GOOGLE CLOUD DOCUMENTATION by GOOGLE, N.A.

