

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Applications					Branch/Spec.	Computer Applications			
Semester	II					Version	1.0.0.0			
Effective from Academic Year			2026-27			Effective for the batch Admitted in		July 2026		
Subject Code	P12E6CAG		Subject Name			Cloud Analytics and GCP				
Teaching scheme						Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total	
	L	TU	P	TW		Theory	40	60	100	
Credit	2	-	2	-	4	Practical	20	30	50	
Hours	2	-	4	-	6					
Objective:										
To equip students with practical skills of Google cloud and provide real-world, hands-on experience in Google Cloud, Big Data, Machine Learning										
Pre-requisites:										
Basic understanding of cloud platform, Networking and database										
Course Outcomes :										
Name of CO	Description									
CO1	Apply cloud automation and infrastructure management tools such as Deployment Manager, Stackdriver, and Dataproc for managing cloud services and resources.									
CO2	Analyze big data processing and machine learning services in Google Cloud including Dataflow, BigQuery, AI Platform, and AutoML.									
CO3	Evaluate scalable cloud infrastructure, load balancing, Kubernetes Engine, and application development environments in Google Cloud Platform.									
CO4	Design secure, reliable, and scalable cloud networking solutions and machine learning data preparation workflows using Google Cloud services.									
			Mapping of CO and PO							
		Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
		CO1	3	2	2	3	2	2	1	3
		CO2	3	3	3	3	2	2	2	3
		CO3	3	3	3	3	2	3	2	3
		CO4	3	3	3	3	2	2	3	3

Practical Content:		
Unit	SECTION-I	Hrs
1	Cloud Automation and Management Tools: Introduction to Infrastructure as Code (IaC), Cloud Deployment Manager, Monitoring and Managing Your Services, Applications and Infrastructure, Stackdriver, Monitoring Multiple Cloud Projects with Stackdriver Managed Big Data Services - Dataproc: Introduction to Big Data Managed Services in the Cloud, Leverage Big Data Operations with Cloud Dataproc, Dataproc: Qwik Start: Console, Dataproc: Qwik Start: Command Line	7
2	Managed Big Data Services - Dataflow: Build Extract, Transform, and Load Pipelines using Cloud Dataflow, Dataflow – Templates, Dataflow - Python, BigQuery, Google's Enterprise Data Warehouse Machine Learning in the Cloud: Introduction to Machine Learning, Machine Learning and GCP, Qwik, Draw, Building Bespoke Machine, Learning Models with AI Platform, AI Platform Qwik Start, Cloud AutoML, Classify Images of Clouds in the Cloud with AutoML Vision, Google's Pre-trained Machine Learning APIs - Cloud Natural Language API, Cloud Speech API, Video Intelligence API	8
	SECTION - II	
3	Implementing Cloud Load Balancing for Compute Engine: Create a Virtual Machine, Compute Engine – Windows, Cloud Shell and gcloud, Google Kubernetes Engine, Set Up Network Load Balancers, Implement Load Balancing on Compute Engine Set Up an App Dev Environment on Google Cloud: Cloud Storage-Google Cloud Console and CLI/SDK, Cloud IMA, Cloud Monitoring, Cloud Run Functions – Console and CLI, PUB/SUB, Set Up an App Dev Environment on Google Cloud	8
4	Build a Secure Google Cloud Network: Securing Virtual Machines using BeyondCorp Enterprise (BCE), Multiple VPC Networks, VPC Networks - Controlling Access, Configure an Application Load Balancer with Google Cloud Armor, Enhance Application Reliability and Scalability with Internal Load Balancing, Build a Secure Google Cloud Network Prepare Data for ML APIs on Google Cloud: Dataprep, Dataflow Templates, Dataflow – Python, Dataproc-console and CLI, Prepare Data for ML APIs on Google Cloud	7

Practical Content:

List of programs specified by the subject teacher based on above mentioned topics

Text Books:

- | | |
|---|--|
| 1 | Google Cloud Platform in Action, JJ Geewax, Manning Publications |
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Reference Books:

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|---|---|
| 1 | Google Cloud Certified Associate Cloud Engineer Study Guide , Dan Sullivan, Sybex (Wiley) |
| 2 | Machine Learning with Google Cloud Platform, Navin Sabharwal & Shakuntala Gupta, Apress |

Web References / MOOC / Certification Course

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| 1 | https://www.skills.google/paths/36 (Google Cloud Computing Foundations Certificate) |
| 2 | https://www.coursera.org/learn/gcp-fundamentals |

Question Paper Scheme:**University Examination Duration: 3 Hours****Note for Examiner:**

- (1) Questions 1 and 4 are compulsory with no options.
- (2) Internal options should be given in questions 2, 3, 5 and 6.

Paper Structure:**SECTION-I**

- Q-1 8 Marks
Q-2 11 Marks
Q-3 11 Marks

SECTION-II

- Q-4 8 Marks
Q-5 11 Marks
Q-6 11 Marks