

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme		Diploma Engineering			Branch		Computer Engineering		
Semester		VI			Version		1.0.0.0		
Effective from Academic Year			2020-21		Effective for the batch Admitted in			JULY 2018	
Subject code		1CE2602	Subject Name		Cloud Computing				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	60	40	100

Pre-requisites:
Knowledge of Computer Networks

Course Learning Outcomes:
At the end of the course, students will have achieved the following learning objectives.
T1 Understand the hardware, software concepts and architecture of cloud computing.
T2 Realize the importance of Cloud Virtualization, Abstractions and Enabling Technologies.
T3 Explore the Programming for Applications on Cloud.

Course Content					
Name of UNIT	Unit Content		Unit Learning Outcomes	Marks	Hrs
UNIT – 1 Introduction to Cloud Technologies	1.1 Cloud Computing 1.2 Layers and Types of Clouds 1.3 Introduction to Cloud Services 1.4 Cloud Infrastructure Management 1.5 Characteristics of Cloud Computing 1.6 Business concerns in the cloud. 1.7 Challenges and Applications		1.1 To explain the core concepts of the cloud computing paradigm. 1.2 Describe the Infrastructure and characteristics of Cloud Computing. 1.3 Articulate the challenges and applications of Cloud Computing.	15	10
UNIT – 2 Virtualization	2.1 Introduction about Virtualization 2.2 Virtualization of Computing, Storage and Resources 2.3 Virtual cluster 2.4Types of virtualization		2.1 To discuss system virtualization and outline its role in enabling the cloud computing system model. 2.2 To illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems. 2.3 Get knowledge of virtualization to know about virtual cluster, types of virtualization.	10	10

UNIT – 3 Cloud services	3.1 Introduction to Cloud Services IaaS, PaaS and SaaS 3.2 Example of IaaS, PaaS and SaaS 3.3 Software as a Service (SaaS): Challenges of SaaS Paradigm 3.4 Infrastructure As a Services (IaaS): Background & Related Work 3.5 Platform As a service (PaaS): Integration of Private and Public Cloud, Technologies and Tools for Cloud Computing	3.1 Understand the various cloud services 3.2 Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS.	18	12
UNIT – 4 Security	4.1 Introduction about Data Security in Cloud Computing 4.2 Security Concerns, Legal issues and Aspects 4.3 Securing the Private and Public Cloud Architecture 4.4 Cloud security: Risks, Security, privacy, Trust. Security of OS, VM.	4.1 Explain the core issues of cloud computing such as security, privacy, and interoperability. 4.2 Understand the key security and compliance challenges of cloud computing.	12	8
UNIT-5 Cloud Middleware	5.1 Introduction about cloud Middleware 5.2 Open Stack Eucalyptus, Windows Azure, CloudSim, EyeOs, Aneka, Google App Engine.	5.1 Describe the concept of Middleware. 5.2 Explain Different types of cloud Middleware.	5	5

List of Practical		
No.	Unit	Name of Practical
1	Unit-1	To demonstrate Types of Clouds.
2	Unit-1	To study about importance of cloud computing in Business and other marketing fields.
3	Unit-2	To study Types of virtualization.
4	Unit-3	To demonstrate infrastructure of cloud computing with diagram.
5	Unit-4	To create and draw Private and Public Cloud of any organization.
6	Unit-5	To study about Open Stack Eucalyptus.
7	Unit-5	To study about Windows Azure.
8	Unit-5	To study about EyeOs.
9	Unit-5	To study about Aneka.
10	Unit-5	To study about Google App Engine.

List of Instruments / Equipment / Trainer Board	
1	Computer system with latest hardware, High speed internet access, Java Environment with IDE (Eclipse or NetBeans)

List of Textbooks			
No	Title of Reference Books	Authors	Publication
1	Cloud Computing: Principles and Paradigms	Rajkumar Buyya, James Broberg, Andrzej M Goscinski	Wiley publication

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Cloud Computing: A Practical Approach	Toby Velte, Anthony Velte	McGraw-Hill Osborne Media.
2	Cloud Application Architectures: Building Applications and Infrastructure in the Cloud	George Reese	O'Reilly Publication

Link of Learning Web Resource	
1	http://www.tutorialspoint.com/cloud_computing/cloud_computing_tutorial.pdf
2	http://www.cloudbus.org/