CLOUD COMPUTING LAB
(Professional Elective – III)

Course Code: KG23ACM325	L	T	P	C
	0	0	3	1.5

B. Tech. III Year II Semester

Course Objectives: The objectives of this course for the student are to:

1. To study various service types, delivery models, and enabling technologies in a cloud computing environment.
2. To learn the methods of programming and deploying applications in the cloud.
3. To explore cloud service providers and tools such as CloudSim, Globus Toolkit, etc.
4. To analyze different programming paradigms suitable for solving real-world and scientific problems using cloud services.
5. To gain practical skills in creating and configuring database instances in the cloud using Amazon RDS and Google Cloud SQL.

Course Outcomes: After completion of this course, the students will be able to:

CO1: **Understand** various service types, delivery models and technologies of a cloud computing environment.

CO2: **Understand** the ways in which the cloud can be programmed and deployed.

CO3: **Understand** cloud service providers like Cloudsim, Globus Toolkit etc.

CO4: **Examine** various programming paradigms suitable to solve real

world and scientific problems using cloud services.

CO5: **Create** and configure database instances in the cloud using Amazon RDS and Google Cloud SQL

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	1	–	–	–	–	2	1	2	3	2	–
CO2	3	3	2	2	2	–	–	–	–	2	1	2	3	3	2
CO3	3	2	2	2	1	–	–	–	–	2	1	2	3	2	2
CO4	3	3	3	3	2	–	–	–	1	3	1	3	3	3	2
CO5	3	3	3	3	3	–	–	–	1	3	2	3	3	3	3

Note: 1 – Low, 2- Medium, 3- High

LIST OF EXPERIMENTS:

1. Install Virtualbox/VMware Workstation with different flavors of Linux or windows OS on top of windows7 or 8.

2. Install a C compiler in the virtual machine created using virtual box and execute Simple Programs

3. Create an Amazon EC2 instance and set up a web-server on the instance and associate an IP address with the instance.

4. Install Google App Engine. Create a hello world app and other simple web applications using python/java.

5. Simulate a cloud scenario using CloudSim and run a scheduling algorithm that is not present in CloudSim.

6. Find a procedure to transfer the files from one virtual machine to another virtual machine.

7. Find a procedure to launch virtual machine using trystack (Online Openstack Demo Version)

8. Install Hadoop single node cluster and run simple applications like word count.

9. Create a database instance in the cloud using Amazon RDS.

10. Create a database instance in the cloud using Google Cloud SQL

TEXT BOOK:

1. Essentials of cloud Computing: K. Chandrasekhran, CRC press, 2014

REFERENCE BOOKS:

1. Cloud Computing: Principles and Paradigms by Rajkumar Buyya, James Broberg and Andrzej i. M. Goscinski, Wiley, 2011.

2. Distributed and Cloud Computing, Kai Hwang, Geoffery C. Fox, Jack J. Dongarra, Elsevier, 2012.

3. Cloud Computing Bible, Barrie Sosinsky, Wiley-India, 2010.