Course Code: CSDT114A	**Course Name: Cloud Computing**	**Total Lectures (30 Hours)**
Teaching Scheme : 4 hrs/week	**Examination Scheme: IA: 15 Marks UE: 35 Marks**	**No. of Credits 2**
Course Prerequisites:	Operating System Fundamentals of Computer Networks Good Understanding of Object Oriented Programming Concepts	
Course Objectives:	• To understand the principles and paradigm of Cloud Computing • To appreciate the role of Virtualization Technologies • Ability to design and deploy Cloud Infrastructure • Understand cloud security issues and solutions	
Chapter	**Course Contents**	**No. of Lectures**
1	**Introduction to Cloud Computing** Overview, Layers and Types of Cloud, Desired Features of a Cloud, Benefits and Disadvantages of Cloud Computing, Cloud Infrastructure Management, Infrastructure as a Service Providers, Platform as a Service Providers, Multitenant Technology. Cloud-Enabling Technology: Broadband Networks and Internet Architecture, Data Center Technology, Virtualization Technology. Infrastructure as a Service, Platform as a Service, Software as a Service, Cloud Deployment Models.	8
2	**Abstraction and Virtualization** Introduction to Virtualization Technologies, Load Balancing and Virtualization, Understanding Hyper visors, Virtual Machines Provisioning and Manageability Virtual Machine Migration Services, Provisioning in the Cloud Context Virtualization of CPU, Memory , I/O Devices, Virtual Clusters and Resource management	7

3	**Programming, Environments and Applications** Features of Cloud and Grid Platforms, Programming Support of Google App Engine, Programming on Amazon AWS and Microsoft Azure, Emerging Cloud Software Environments, Applications: Moving application to cloud, Microsoft Cloud Services, Google Cloud Applications, Amazon Cloud Services, Cloud Applications.	8
4	**Security In The Cloud** Security Overview – Cloud Security Challenges and Risks – Software-as-a-Service Security – Security Governance – Risk Management – Security Monitoring – Security Architecture Design – Data Security – Application Security – Virtual Machine Security - Identity Management and Access Control, Disaster Recovery in Clouds.	7

References:

Sr. No.	Title of the Book	Author/s	Publication
1	Cloud Computing: Technologies and Strategies of the Ubiquitous Data Center	Brian J.S. Chee and Curtis Franklin	CRC Press, ISBN :9781439806128
2	Rajkumar Buyya, Christian Vecchiola, S. ThamaraiSelvi	Mastering Cloud Computing: Foundations and Applications Programming	McGraw Hill, ISBN: 978 1259029950, 1259029956
3	Kai Hwang, Geoffrey C Fox, Jack G Dongarra	Distributed and Cloud Computing, From Parallel Processing to the Internet of Things	Morgan Kaufmann Publishers, 2012.

CSDP114A: Cloud Computing Practical Assignments

Sr. No	Assignment
1.	Working and Implementation of Infrastructure as a service.
2.	Working and Implementation of Software as a service.
3.	Working and Implementation of Platform as a services.
4.	Practical Implementation of Storage as a Service.
5.	Working of Google drive to make spreadsheet and notes.
6.	Working and Implementation of identity management.
7.	Write a program for web feed.
8.	Execute the step to Demonstrate and implementation of cloud on single sign on.
9.	Practical Implementation of cloud security.
10.	Installing and Developing Application Using Google App Engine.
11.	Implement VMWAreESXi Server
12.	Using OpenNebula to manage heterogeneous distributed data center Infrastructure.
13.	Implementation of Cloud Failure Cluster.
14.	Managing and working of cloud xen server.
15.	Working with Aneka and demonstrate how to Managing cloud computing Resources .
16.	Installation and configuration of cloud Hadoop and demonstrate simple query.
17.	Create a sample mobile application using Amazon Web Service (AWS) account as a cloud service. Also provide database connectivity with implemented mobile application.

CSDT124A: Project Guidelines

CSDP124A: Project Related Assignments

Assignment 1

Assignment 2

Assignment 3

Assignment 4