

5.5 PROGRAMME ELECTIVE – I

5.5.1 CLOUD COMPUTING

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RATIONALE

This course offers a good understanding of cloud computing concepts and challenges faced in implementation of cloud computing. It also offers the concept of Virtualization along with security issues faced in the field of cloud computing.

COURSE OUTCOMES

After undergoing the subject, the students will be able to:

- CO1: Explain core concepts of cloud computing paradigm.
- CO2: Describe various Service and Deployment Models.
- CO3: Detail SLA management in Cloud Computing.
- CO4: Learn various trimmings and accessories sourced in garment production.
- CO5: Illustrate the fundamental concepts of cloud storage and apply the concept of virtualization.

DETAILED CONTENTS

UNIT I

INTRODUCTION

Evolution of Cloud Computing, Cloud Computing Overview, Characteristics, Applications, Benefits, Challenges. Major Cloud Vendors/Service Provider in the world.

UNIT II

SERVICE AND DEPLOYMENT MODELS

Cloud Computing Service Models: Infrastructure as a Service, Platform as a Service, Software as a Service, Cloud Computing Deployment Models: Private Cloud; Public Cloud, Community Cloud, Hybrid Cloud, Major Cloud Service providers.

UNIT III**SERVICE LEVEL AGREEMENT (SLA) MANAGEMENT**

Overview of SLA, Types of SLA, SLA Life Cycle, SLA Management Process.

UNIT IV**VIRTUALIZATION CONCEPTS**

Overview of Virtualization, Types of Virtualization, Benefits of Virtualization, Hypervisors and its types.

UNIT V**CLOUD STORAGE & SECURITY**

Storage as a Service, Benefits and Challenges, Storage Area Networks (SANs), Infrastructure Security, Network Level Security, Data Security & Privacy Issues, Legal Issues in Cloud Computing.

PRACTICAL EXERCISES

1. Introduction to Cloud Vendors: Amazon, Microsoft, IBM.
2. Setting up Virtualization using Virtualbox/VMWare Hypervisor
3. Introduction to OwnCloud and its features.
4. Installation and configuration of OwnCloud software for SaaS
5. Installing Open Source Cloud simulation software Cloud Sim.

RECOMMENDED BOOKS

1. Rajkumar Buyya, James Broberg, Andrzej Goscinski, “ Cloud Computing: Principles and Paradigms, Wiley.
2. Barrie Sosinsky, “ Cloud Computing Bible”, Wiley, 2011.
3. Judith Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper, “ Cloud Computing for Dummies”, Wiley, 2010.

RECOMMENDED WEBSITES

1. <http://nptel.ac.in>

2. <https://ekumbh.aicte-india.org>
3. <http://swayam.gov.in>

INSTRUCTIONAL STRATEGY

This is hands on practice based subject and topics taught in the class should be practiced in the Lab regularly for development of required skills among the students. This subject contains five units of equal weightage.