CLOUD COMPUTING

CREDITS:	3

OBJECTIVE:
- To expose the Learners to the frontier areas of Cloud Computing
- To provide an in-depth and comprehensive knowledge of the Cloud Computing fundamental issues, technologies, applications and implementations.
- To shed light on the Security issues in Cloud Computing
- To introduce about the Cloud Standards.

UNIT I - HISTORY OF CLOUD COMPUTING   9
History of Centralized and Distributed Computing - Overview of Distributed Computing Cluster computing, Grid computing. Technologies for Network based systems- System models for Distributed and cloud computing- Software environments for distributed systems and clouds.

UNIT II - INTRODUCTION TO CLOUD COMPUTING   9
Introduction to Cloud Computing- Cloud issues and challenges - Properties - Characteristics - Service models, Deployment models. Cloud resources: Network and API - Virtual and Physical computational resources - Data-storage. Virtualization concepts - Types of Virtualization- Introduction to Various Hypervisors - High Availability (HA)/Disaster Recovery (DR) using Virtualization, Moving VMs .

UNIT III - CLOUD COMPUTING APPLICATIONS   9
Cloud Programming and Software Environments – Parallel and Distributed Programming paradigms – Overview on Amazon AWS and Microsoft Azure – Overview on Google App Engine – Emerging Cloud software Environment.

UNIT IV - CLOUD SECURITY   9
Cloud Access: authentication, authorization and accounting - Cloud Provenance and meta-data - Cloud Reliability and fault-tolerance - Cloud Security, privacy, policy and compliance- Cloud federation, interoperability and standards.

UNIT V - GOVERNANCE AND THE FUTURE OF CLOUD   9
Organizational Readiness and Change Management in the Cloud Age, Legal Issues in Cloud Computing, Achieving Production Readiness for Cloud Services, How Cloud Will Change Operating Systems, Future of Cloud TV & Cloud-Based Smart Devices, Cloud and Mobile, Home-Based Cloud Computing.

TOTAL: 45 PERIODS

OUTCOME:

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
- Understand the core issues of cloud computing such as security, privacy.

REFERENCES:

1. Kai Hwang, Geoffrey C. Fox and Jack J. Dongarra, Distributed and cloud computing from Parallel Processing to the Internet of Things, Morgan Kaufmann, Elsevier, 2012
2. RajkumarBuyya, James Broberg and Andrzej Goscinski, Cloud Computing – Principles and Paradigms, John Wiley & Sons, 2011
3. Kris Jamsa, Cloud Computing, Jones & Bartlett Learning, 2013
4. Kumar Saurahb, Cloud Computing – Insights into new era infrastructure, Wiley India, 2nd Edition, 2012
5. Barrie Sosinsky, " Cloud Computing Bible" John Wiley & Sons, 2011
6. Tim Mather, Subra Kumaraswamy, and Shahed Latif, Cloud Security and Privacy An Enterprise Perspective on Risks and Compliance, O'Reilly 2009