21INT08	CLOUD COMPUTING VIRTUALIZATION	L	T	P	C
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Course Objectives

- To understand the fundmentals of Cloud Computing and its evolution
- To understand the cloud infrastructures
- To gain knowledge on the concept of virtualization that is fundamental to cloud computing
- To learn programming and software environments for cloud and big data
- To understand d the security ones in clinal computing

UNIT I	INTRODUCTION CLOUD COMPUTING	9 Hours

Technologies for Network-Based System System Models for Distributed and Clad Computing - NIST Cloud Computing Reference Architecture Cloud Computing and Service Models Characteristics - Cloud Services- Cloud models (laaS, PaaS, SaaS) Cloud ecosystem and enabling technologies.

UNIT II	CLOUD INFRASTRUCTURE	9 Hours

Architectural Design of Compute and Storage Clouds - Layered Clood Architecture Development - Design Challenges Inter Cimal Resource Management - Resource Provisioning and Platform Deployment-Global Exchange of Clod Resources

UNIT III	VIRTUALIZATION	9 Hours

Introduction- Implementation Levels of Virtualization - Virtualization Structures Tools and Mechanisms- Virtualization of CPU Memory, and 10 Devices-Virtual Chester and Resource Management Virtualization for Data Center Automation

UNIT IV	CLOUD PROGRAMMING AND SOFTWARE ENVIRONMENTS	9 Hours

Hadoop-Hadoop HDFS Hadoop - Map Reduce Google-Google App Engine - GFS- Big Table – Microsoft Azure-Open Source Eucalypton and Nimbus - OpenNiebla - OpenStack and Appliances

UNIT V	SECURITY	9 Hours

Security management in Peer-to-Peer networks-Peer trust and Reputation Systems-Trust overlay and DHT implementation-Power Trust-Secuting Overlays Cloud Security and Trust Management-Defense Strategies -Distributed Intrusion Detection Data and Software Protection Techniques Reputation Guided Protection of Data Centers

Text books:

1. Kai Hwang Geoffery C Fox and Jack J. Dongarra. "Distributed and Cloud Computing Clusters Grids Clouds and the Future of Internet, Find Edition Morgan Kaufman Publisher, an Imprim of Elsevier, 2012

Reference Books:

1. Rajkumar Bayya, James Broberg, Andrzej M. Goscinski, Cloud Computing Principles and Paradigms, Wiley,2010
2. Toby Velte. Anthony Velte. Robert Elsempeter, Cloud Computing. A Practical Approach, McGraw Hill, 2010
3. Thomas Er Ricardo Puttini, Zaiglum Mahnood, Cloud Computing: Concepts, Technology & Architecture" First Edition, Prentice Hall 2013
4. Jason Venner, "Pro Hadoop- Build Scalable Distributed Applications in the Cloud". A Press, 2000 5 Tom White, "Hadoop The Definitive Guide Fine Edition. O'Reilly, 2009 Dekumar Saarabb, Clad Compating, Second Edition, Wiley, 2012.
5. Barry Wilkinson, "Grid Computing Techniques and Applications". Chupman and Hall, CRC, Taylor and Francis Group, 2010.
6. P.Venkata Krisha M Rajasekhara Babe V Sarida, "Principles of Grid Computing concepts and application".Ane's student edition.2010.
7. Anthony TVelte. Toby J. Velte Robert Elsenpeter. "Cloud computing"Indian edition, 2010 10. John W. Rattinghouse, James F. Ransome, Cloud Computing: Implementation, Management, and Security, CRC Press, 2010,