I Year II Semester   **L   P   C**

Code: 17CS263   **4   0   3**

CLOUD COMPUTING
(Elective-2)

UNITI:

Introduction: Network centric computing, Network centric content, peer-to–peer systems, cloud computing delivery models and services, Ethical issues, Vulnerabilities, Major challenges for cloud computing
Parallel and Distributed Systems: introduction, architecture, distributed systems, communication protocols, logical clocks, message delivery rules, concurrency, and model concurrency with Petri Nets.

UNITII:
Cloud Infrastructure: At Amazon, The Google Perspective, Microsoft Windows Azure, Open Source Software Platforms, Cloud storage diversity, Inter cloud, energy use, responsibility sharing, user experience, Software licensing
Cloud Computing : Applications and Paradigms: Challenges for cloud, existing cloud applications and new opportunities, architectural styles, workflows, The Zookeeper, The Map Reduce Program model, HPC on cloud, biological research

UNITIII:
Cloud Resource virtualization: Virtualization, layering and virtualization, virtual machine monitors, virtual machines, virtualization- full and para, performance and security isolation, hardware support for virtualization, Case Study: Xen, vBlades
Cloud Resource Management and Scheduling: Policies and Mechanisms, Applications of control theory to task scheduling, Stability of a two-level resource allocation architecture, feedback control based on dynamic thresholds, coordination, resource bundling, scheduling algorithms, fair queuing, start time fair queuing, cloud scheduling subject to deadlines, Scheduling Map Reduce applications, Resource management and dynamic application scaling

UNITIV:
Storage Systems: Evolution of storage technology, storage models, file systems and database, distributed file systems, general parallel file systems. Google file system. Apache Hadoop, Big Table, Megastore (text book 1), Amazon Simple Storage Service(S3)(Text book2)
Cloud Security: Cloud security risks, security – atop concern for cloud users, privacy and privacy impact assessment, trust, OS security, Virtual machine security, Security risks

UNITV:
Cloud Application Development: Amazon WebServices:EC2–instances, connecting clients, security rules, launching, usage of S3 in Java, Installing Simple Notification Service on Ubuntu 10.04,Installing Hadoop on Eclipse, Cloud based simulation of a Distributed trust algorithm, Cloud for adaptive data streaming(Text Book 1)
Google: Google App Engine, Google Web Toolkit (TextBook2)

Micro Soft: Azure Services Platform, Windows live, Exchange Online, Share Point Services, Microsoft Dynamics CRM (Text Book 2)

TEXTBOOKS:

Cloud Computing, Theory and Practice, DanC Marinescu, MKElsevier

Cloud Computing, A Practical Approach, Anthony TVelte, TobyJVelte, Robert Elsen peter, TMH

REFERNCEBOOK:

Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammaraiselvi, TMH