MCA- C303 Cloud Computing				
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Course objective:

1. To understand the basics of Cloud Computing.
2. To understand the movement from a traditional network infrastructure to a Cloud solution.

Course outcomes:

1. To assess existing hosting Cloud platforms and computing paradigms currently being used in industry and academia
2. To comprehend the need of data centre, its virtualization techniques and types of clouds.
3. To demonstrate the implementation of cloud by using Amazon Web Services, Azure, Google App Engine. And its virtualization.
4. To demonstrate the use of Hadoop framework, data storage and MapReduce using real world applications

Introduction and Evolution of Computing Paradigms: Overview of Existing Hosting Platforms, Cluster Computing, Grid Computing, Utility Computing, Autonomic Computing, Fog Computing, Introduction to Cloud Computing, Cloud Computing history and evolution, practical applications of cloud computing for various industries, HealthCare and education, and benefits of cloud computing.

Cloud Issues and Challenges: Cloud computing issues and challenges like Security, Elasticity, Resource management and scheduling, QoS (Quality of Service) and Resource Allocation, Cost Management, Big Data, Energy Efficiency, Load Balancing.

Cloud Computing Architecture: Cloud Architecture model, Types of Clouds: Public Private & Hybrid Clouds, Cloud based services: Iaas, PaaS and SaaS

Classification of Cloud Implementations: Amazon Web Services, The Elastic Compute Cloud (EC2), The Simple Storage Service (S3), DyanmoDB, The Simple Queuing Services (SQS), Google AppEngine – PaaS, Windows Azure, Aneka, A Comparison of Cloud Computing Platforms

Virtualization: Virtualization, Advantages and disadvantages of Virtualization, Types of Virtualization: Resource Virtualization-Server, Storage and Network virtualization, Migration of processes, Classic Data Center, Virtualized Data Center (Compute, Storage, Networking and Application), Business Continuity in VDC.

Cloud based Data Storage: Introduction to Map Reduce, Design of data base applications based on Map Reduce in Apache Hadoop, Task Partitioning, Data partitioning, Hadoop Schedulers, Data Synchronization, Distributed File system, Data Replication

Recommended Books:

1. Rajkumar Buyya, Christian Vecchiola, and Thamarai Selvi, Mastering Cloud Computing Tata McGraw Hill
2. Barrie Sosinsky, Cloud Computing Bible. Wiley India Pvt. Ltd
3. Raj Kumar Buyya, James Broberg, Andrezei M.Goscinski, Cloud Computing: Principles and paradigms , Wiley India Pvt. Ltd

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