

Subject Code	Subject Name	Credits
26CS106	CLOUD COMPUTING	4

Course Objectives:

1. To understand cloud computing basics
2. To get to know about various architecture for cloud computing

Learning Objectives:

On successful completion of the course, students will be able to:

1. To get accustomed to developing applications in a cloud environment

Unit 1 - Introduction (12 hrs.):

Cloud computing components- Infrastructure-services- storage applications-database services – Deployment models of Cloud- Services offered by Cloud- Benefits and Limitations of Cloud Computing – Issues in Cloud security- Cloud security services and design principles.

Unit 2 - Virtualization (12 hrs.):

Virtualization – Enabling technology for cloud computing- Types of Virtualization- Server Virtualization- Desktop Virtualization – Memory Virtualization – Application and Storage Virtualization- Tools and Products available for Virtualization.

Unit 3 - SaaS and PaaS (12 hrs.):

SaaS and PaaS Getting started with SaaS- Understanding the multitenant nature of SaaS solutions- Understanding OpenSaaS Solutions- Understanding Service Oriented Architecture- PaaS- Benefits and Limitations of PaaS.

Unit 4 - IaaS and Cloud Storage (12 hrs.):

Understanding IaaS- Improving performance through Load balancing- Server Types within IaaS solutions- Utilizing cloud based NAS devices – Understanding Cloud based data storage- Cloud based backup devices- Cloud based database solutions- Cloud based block storage.

Unit 5 - Client Server Distributed Architecture (12 hrs.):

Client Server Distributed Architecture for cloud – Traditional apps vs. Cloud apps – Client side programming model: Web clients. Mobile clients- Server Side Programming Technologies: AJAX, JSON, Web Services (RPC, REST)- MVC Design Patterns for Cloud Application Development.

Reference Books:

1. Cloud Computing: A Practical Approach by Anthony T.Velte, Toby J.Velte, Robert Elsenpeter, Tata McGraw Hill
2. Cloud Computing By Jamsa
3. Cloud Computing: Methodology, Systems, and Applications by Lizhe Wang, Rajiv Ranjan, Jinjun Chen, Boualem Benatallah
4. Handbook of Cloud Computing edited by Borko Furht, Armando Escalante
5. Cloud Computing: Principles and Paradigms by Rajkumar Buyya, James Broberg, Andrzej M. Goscinski