Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
COM-701(A)	Cloud Computing and Services	PEC	3	2	1	0	50	100	150

Course Outcomes:

At the end of the course the students will be able to:	
CO1	Articulate the main concepts, key technologies, strengths, limitations of cloud computing and the possible applications for state-of-the-art cloud computing.
CO2	Identify the architecture and infrastructure of cloud computing, including cloud delivery and deployment models.
CO3	Analyze the performance, scalability, and availability of the underlying cloud technologies and software.
CO4	Develop the core issues of cloud computing such as security, privacy, and interoperability.
CO5	Evaluate the appropriate cloud computing solutions and recommendations according to the applications used.

Detailed Syllabus

Section-A

Unit 1: Cloud Computing Overview: Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service, Broad network access, Location independent resource pooling, Rapid elasticity, Measured service, Comparing cloud providers with traditional IT service providers, Roots of cloud computing. **(06 Hrs.)**

Unit 2: Cloud Insights: Architectural influences – High-performance computing, Utility and Enterprise grid computing, Cloud scenarios – Benefits: scalability, simplicity, vendors, security, Limitations – Sensitive information - Application development- security level of third party - security benefits, Regularity issues: Government policies.

(08 Hrs.)

Unit 3: Cloud Architecture-Layers and Models: Layers in cloud architecture, Software as a Service (SaaS), features of SaaS and benefits, Platform as a Service (PaaS), features of PaaS and benefits, Infrastructure as a Service (IaaS), features of IaaS and benefits, Service providers, challenges, and risks in cloud adoption. Cloud deployment model: Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing.

(08 Hrs.)

Section-B

Unit 4: Monitoring and Management: Architecture for Federated Cloud Computing, SLA management in cloud computing, performance prediction for HPC on cloud, Data Security in cloud. Legal issues in cloud computing.

(08 Hrs.)

Unit 5: Applications: Best practices in architecting cloud applications in the AWS cloud, building Content Delivery Networks (CDN) using clouds, Resource Cloud Mashups. **(10 Hrs.)**

Text Books

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Cloud Computing: Principles and Paradigms	Rajkumar Buyya, James Broberg, Andrzej Goscinski	Wiley	1st (2013)