

Teaching and Examination Scheme:

Teaching Scheme			Credits	Marks			Duration of End Semester Examination
L	T	P/D	C	Sessional	End Semester Exams	Total	
3	1	0	4	40	60	100	3Hrs

**COURSE OBJECTIVE:**

The course should enable the students to understand the basic concepts in cloud, migration to cloud, enterprise cloud and security aspects in cloud.

**COURSE CONTENT:**

UNIT	CONTENT	No. of Hrs.
I	<p><b>Introduction to Cloud Computing:</b> Online social networks and applications, cloud introduction and overview, different clouds, risks, novel applications of cloud computing.</p> <p><b>Cloud Computing Architecture:</b> Introduction cloud computing architecture, on demand computing virtualization at the infrastructure level, CPU virtualization, discussion on hypervisors storage virtualization, the SPI framework for cloud computing, the cloud services delivery model</p>	10
II	<p><b>Cloud Deployment Models:</b> Key drivers to adopting the cloud, the impact of cloud computing on users, governance in the cloud, barriers to cloud computing adoption in the enterprise.</p> <p><b>Security Issues in Cloud Computing:</b> Security in cloud computing environment, infrastructure security: the network level, the host level, the application level, data security and storage, aspects of data security, data security mitigation provider data and its security</p>	10
III	<p><b>Identity and Access Management:</b> Trust boundaries and IAM, IAM challenges, relevant IAM standards and protocols for cloud services, IAM practices in the cloud, cloud authorization management.</p> <p><b>Security Management in the Cloud:</b> Security management standards, security management in the cloud, availability management: SaaS, PaaS, IaaS</p>	10
IV	<p><b>Privacy Issues:</b> Privacy issues, data life cycle, key privacy concerns in the cloud, protecting privacy, changes to privacy risk management and compliance in relation to cloud computing, legal and regulatory implications, U.S. laws and regulations, international laws and regulations.</p> <p><b>Audit and Compliance:</b> Internal policy compliance, governance, risk, and compliance (GRC), regulatory/external compliance, cloud security alliance, auditing the cloud for compliance, security as a cloud.</p>	9

**Text Books:**

1. John Rhoton, "*Cloud Computing Explained*", Implementation Handbook for Enterprises.

  
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2. Tim Mather, "*Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance*", (Theory in Practice), ISBN-10: 0596802765, O'Reilly Media
3. "*Cloud Application Architectures: Building Applications and Infrastructure in the Cloud*", Publisher: O'Reilly Media; ISBN-10: 0596156367, ISBN-13: 978-0596156367

**Reference Books:**

1. Barrie Sosinsky, "*Cloud Computing Bible*", Wiley Publication, ISBN-10: 0470903562
2. Timothy Chou, "*Introduction to Cloud Computing*".