## CLOUD COMPUTING

S.N	UNITS	HOURS
1	INTRODUCTION	10
	The emergence of cloud computing	
	Cloud-Based services	
	Grid computing or cloud computing	
	Components of cloud computing	
	Virtualization	
	Cloud computing deployment models	
	Benefit of using cloud model	
	Legal Issues in Using cloud models	
	Characteristics of Cloud Computing	
	Evolution of cloud computing	
	Challenges for the cloud computing	
	Grid computing	
	Distributed computing in Grid and Cloud	
2	CLOUD SERVICE MODELS	15
	Communication as a service (CaaS)	
	Advantages of CaaS	
	Fully Integrated	
	Enterprise Class Unified Communications	
	Infrastructure as a Service (IaaS)	
	Modern On Demand Computing	
	Amazon's elastic cloud	
	<ul> <li>Amazon EC2 service characteristics</li> </ul>	
	Monitoring as a service (MaaS)	
	<ul> <li>Protection Against Internal and External Threats</li> </ul>	
	Platform as a service (PaaS)	
	The Traditional on premises model	
	The new cloud model	
	Key characteristics of PaaS	
	<ul> <li>Software as a Service (SaaS)</li> </ul>	
	SaaS implementation Issues	
	Key characteristics of SaaS	
	Benefits of the SaaS Model	
	Jericho cloud cube model	
3	BUILDIN CLOUD NETWORK	9
	<ul> <li>Evolution from Managed Service Providers (MPS) to cloud</li> </ul>	
	computing	
	Single purpose architectures to multi-purpose architectures	
	Data center virtualization	
	Cloud data center	

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<ul> <li>Open source software in data centers</li> </ul>	
<ul> <li>Open source in cloud computing</li> </ul>	
<ul> <li>Web presence (Apache, Jetty, Zend Framework)</li> </ul>	
<ul> <li>Database Tier (MySQL), PostgreSQL)</li> </ul>	
<ul> <li>Application Tier (Zope, Plone, AJAX, Apache Struts)</li> </ul>	
<ul> <li>System and Network Management Tier</li> </ul>	
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Cloud security challenges	
<ul> <li>Software as a service</li> </ul>	
Security management	
Risk management	
<ul> <li>Security monitoring and incident response</li> </ul>	
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<ul> <li>Vulnerability</li> </ul>	
<ul> <li>Assessment</li> </ul>	
Data privacy and security	
Data control	
Application security	
Network intrusion detection	
Implementing network detection in the cloud	
Host intrusion detection	
Disaster recovery	
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Disasters in cloud	
Disaster management	
	Combining in SOA Characterizing SOA Open source software in data centers Open source in cloud computing Web presence (Apache, Jetty, Zend Framework) Database Tier (MySQL), PostgreSQL) Application Tier (Zope, Plone, AJAX, Apache Struts) System and Network Management Tier  SECURITY IN CLOUD COMPUTING Cloud security challenges Software as a service Security management Risk management Security monitoring and incident response Security architecture design Vulnerability Assessment Data privacy and security Data control Application security Virtual machine security Virtual machine security Network intrusion detection Implementing network detection in the cloud Host intrusion detection Disaster recovery Disaster recovery Disaster recovery planning Disasters in cloud

## Recommended Books:

Cloud Computing: Implementation Management and Security, John W. Rittinghouse and James F. Ransome (Recommended for Unit 1, 2, 3 4)

Cloud Application architecture, George Reese (Recommended for Unit 4)

Cloud Computing for Dummies, Judith Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper(Recommended for Unit 3)

Handbook of cloud computing, Borko Furht, Armando Escalante (Recommended for Unit 1)

Cloud Computing and SOA Convergence in your Enterprise, a step by step guide, David S. Linthicum (Recommended for Unit 1, 2, 3)