

SREE VIDYANIKETHAN ENGINEERING COLLEGE (Autonomous)
SREE SAINATH NAGAR, A. RANGAMPET – 517 102

LESSON PLAN

Name of the Subject : Cloud Computing (16MT12501)

Class & Semester : M. Tech, I - Semester

Name(s) of the faculty Member(s) : Mr. S. Sreenivasa Chakravarthi

S. No.	Topic	No. of periods	Book(s) followed	Topics for self study
UNIT – I: Introduction to Virtualization				
1.	Characteristics of Virtualized Environments,	1	T1	Technology Example – Aneka platform, OpenStack, Eucalyptus and other Middleware layer components.
2.	Taxonomy of Virtualization Techniques,	1	T1	
3.	Virtualization and Cloud Computing, Pros and Cons of Virtualization,	1	T1	
4.	Technology Examples – XEN	2	T1	
5.	Technology Examples –VMware	2	T1	
6.	Technology Examples – Microsoft Hyper-V	2	T1	
Total periods required:		9		
UNIT – II: Cloud Architecture				
7.	Introduction to Cloud: Defining Cloud Computing, Cloud Types - The NIST model	1	T2	Study the architecture (layers level) of Aneka platform.
8.	The Cloud Cube Model, Deployment models, Service models,	2	T2	
9.	Examining the Characteristics of Cloud Computing, Paradigm shift,	1	T2	
10.	Benefits of cloud computing, Disadvantages of cloud computing, Assessing the Role of Open Standards.	2	T2	
11.	Cloud Architecture: Exploring the Cloud Computing Stack, Composability,	2	T2	
12.	Infrastructure, Platforms, Virtual Appliances,	1	T2	
13.	Communication Protocols and Applications.	2	T2	
Total periods required:		11		
UNIT -III: Defining Cloud Services				
14.	Defining Infrastructure as a Service (IaaS) – IaaS workloads, Pods, aggregation, and silos,	2	T2	Study various service levels and supporting security services in OpenStack & Eucalyptus
15.	Defining Platform as a Service (PaaS), Defining Software as a Service (SaaS) – SaaS characteristics,	1	T2	
16.	Open SaaS and SOA, Salesforce.com and CRM SaaS	2	T2	
17.	Defining Identity as a Service (IDaaS) – what is an identity?	1	T2	
18.	Networked identity service classes,	2	T2	

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	Identity system codes of conduct.			
19.	IDaaS interoperability, Defining Compliance as a Service (CaaS).	2	T2	
Total periods required:		10		
UNIT – IV: Cloud Programming Concepts				
20.	Concurrent Programming – Introduction to Parallelism for Single Machine Computation,	2	T2	Study Thread Programming in Aneka Platform
21.	Programming Applications with Threads,	2	T2	
22.	High Throughput Computing – Task Programming,	2	T2	
23.	Task based Application Models,	2	T2	
24.	Data Intensive Computing – What is Data Intensive Computing and	2	T2	
25.	Technologies for Data Intensive Computing.	2	T2	
Total periods required:		12		
UNIT – V: Industrial Platforms and Trending Developments				
26.	Case Studies on Cloud Platforms – Amazon Web Services,	2	T1	Conduct a comparative study on cloud platforms. Understand the trending cloud technologies for research scope.
27.	Case Studies on Cloud Platforms – Google App Engine,	2	T1	
28.	Case Studies on Cloud Platforms – Microsoft Azure,	2	T1	
29.	Case Studies on Cloud Applications – Scientific Applications,	1	T1	
30.	Case Studies on Cloud Applications – Business and Consumer Applications.	1	T1	
31.	Enhancements in Cloud – Energy Efficiency in Clouds,	1	T1	
32.	Market based Management of Clouds,	2	T1	
33.	Federated Clouds / InterCloud, Third Party Cloud Services.	2	T1	
Total periods required:		13		
Grand total periods required:		55		

TEXT BOOKS:

T1. Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi, "Mastering Cloud Computing: Foundations and Applications Programming," 1st Edition, McGraw Hill, 2013.

T2. Barrie Sosinsky, "Cloud Computing Bible," 1st Edition, Wiley India Pvt Ltd, 2011.

REFERENCE BOOKS:

R1. Anthony T. Velte, Toby J. Velte Robert Elsenpeter, "Cloud Computing: A Practical Approach," 1st Edition, Tata Mc Graw Hill, 2010.

R2. George Reese, "*Cloud Application Architectures*," 1st Edition, O'Reilly Publishers, 2010.