

### Cloud Computing

<b>Course Code</b>	20CS4701C	<b>Year</b>	IV	<b>Semester</b>	I
<b>Course Category</b>	PEC	<b>Branch</b>	CSE	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	Computer Networks, Operating Systems
<b>Continuous Evaluation:</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

### Course Outcomes

<b>Upon Successful completion of course, the student will be able to</b>		
CO1	Understand the basic concepts of virtualization and Cloud Computing.	<b>L2</b>
CO2	Apply cloud computing framework to build and deploy customized applications	<b>L3</b>
CO3	Analyze the given application and choose suitable platform for deploying cloud.	<b>L4</b>

### Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3					1								
CO2														3
CO3		3							1	1				

<b>Syllabus</b>		
<b>Unit No</b>	<b>Contents</b>	<b>Mapped CO</b>
<b>I</b>	<b>Introduction to Cloud:</b> Cloud Computing at a Glance, The Vision of Cloud Computing, Defining a Cloud, A Closer Look, Cloud Computing Reference Model, Characteristics and Benefits. <b>Virtualization:</b> Introduction, Characteristics of Virtualized Environment, Taxonomy of Virtualization Techniques, Virtualization and Cloud computing, Pros and Cons of Virtualization, Technology Examples- VMware and Microsoft Hyper-V.	<b>CO1</b>
<b>II</b>	<b>Cloud Computing Architecture :</b> Introduction, Cloud Reference Model, Architecture, Infrastructure / Hardware as a Service, Platform as a Service, Software as a Service, Types of Clouds, Public Clouds, Private Clouds, Hybrid Clouds, Community Clouds.	<b>CO1,CO2,CO3</b>
<b>III</b>	<b>Aneka:</b> Cloud Application Platform Framework Overview, Anatomy of the Aneka Container, From the Ground Up: Platform Abstraction Layer, Fabric Services, Foundation Services, Application Services, Building Aneka Clouds, Infrastructure Organization, Logical Organization, Private Cloud Deployment Mode, Public Cloud Deployment Mode, Hybrid Cloud Deployment Mode.	<b>CO1,CO2,CO3</b>
<b>IV</b>	<b>Cloud Applications:</b> Scientific Applications – Health care, Geoscience and Biology. Business and Consumer Applications- CRM and ERP, Social Networking, Media Applications and Multiplayer Online Gaming.	<b>CO1,CO3</b>
<b>V</b>	<b>Cloud Platforms in Industry:</b> Amazon Web Services- Compute Services, Storage Services, Communication Services and Additional Services. Google App Engine-Architecture and Core Concepts, Application Life-Cycle, cost model. Microsoft Azure- Azure Core Concepts, SQL Azure.	<b>CO1,CO3</b>

### **Learning Resources**

#### **Text Books**

1. Mastering Cloud Computing, Rajkumar Buyya, Christian Vecchiola, S.Thamarai Selvi, 2013, TMH.

#### **References**

1. Cloud Computing Principles and Paradigms, Rajkumar Buyya , James Broberg, Andrzej Goscinski, Wiley Publishing.
2. Cloud Application Architectures, George Reese , First Edition, O'Reilly, Media 2009.
3. Cloud Computing – web based Applications that change the way you work and collaborate Online, Micheal Miller, Pearson Education.

#### **e-Resources and other Digital Material**

1. <http://www.slideshare.net/himanshuawasthi2109/cloud-computing-ppt-16240131>
2. <https://nptel.ac.in/courses/106105167>
3. [https://www.youtube.com/watch?v=r8Lu\\_BjxlZc](https://www.youtube.com/watch?v=r8Lu_BjxlZc)
4. <http://video.mit.edu/watch/mitef-nyc-cloud-computing-8347/>