

## CLOUD COMPUTING

<b>Course Code</b>		<b>Year</b>	IV	<b>Semester</b>	I
<b>Course Category</b>	Minor	<b>Branch</b>		<b>Course Type</b>	Theory
<b>Credits</b>	4	<b>L-T-P</b>	4-0-0	<b>Prerequisites</b>	Computer Networks, Operating Systems
<b>Continuous Internal Evaluation :</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

### Course Outcomes

Upon successful completion of the course, the student will be able to

<b>CO1</b>	Understand the basic concepts of virtualization and Cloud Computing.	<b>L2</b>
<b>CO2</b>	Apply cloud computing framework to build and deploy customized applications	<b>L3</b>
<b>CO3</b>	Analyse 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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>	√													
<b>CO2</b>	√								√	√			√	
<b>CO3</b>		√							√	√			√	

Syllabus		Mapped CO
Unit No.	Contents	
I	Introduction to Cloud: Cloud Computing at a Glance, The Vision of Cloud Computing, Defining a Cloud, A Closer Look, Cloud Computing Reference Model. Characteristics and Benefits, Challenges Ahead, Historical Developments. Virtualization: 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.	CO1
II	Cloud Computing Architecture : 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, Economics of the Cloud, Open Challenges, Cloud Interoperability and Standards, Scalability and Fault Tolerance.	CO1,CO2, CO3
III	Aneka: 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, Cloud Programming and Management, Aneka SDK, Management Tools.	CO1,CO2, CO3
IV	Cloud Applications: Scientific Applications – Health care, Geoscience and Biology. Business and Consumer Applications- CRM and ERP, Social Networking, Media Applications and Multiplayer Online Gaming.	CO1,CO3
V	Cloud Platforms in Industry: 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.	CO1,CO3

#### 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/>