20CS4701C - Cloud Computing

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

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

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| **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 |  |  |  |  |

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| **Micro Syllabus** | | |
| **Unit No** | **Contents** | **Mapped CO** |
| **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.  **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, and Community Clouds. | **CO1, 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. | **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** |

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| **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> 4. <http://video.mit.edu/watch/mitef-nyc-cloud-computing-8347/> |

**Course Coordinator HOD**

**Dr P Sai Kiran**