# 20IT32J1 - CLOUD COMPUTING

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| Course Category: | Job Oriented Elective | Credits: | 3 |
| Course Type: | Theory | Lecture-Tutorial-Practical: | 3-0-0 |
| Prerequisite: | Operating Systems, Internet, Network Security, Parallel Processing, Databases and various computing. | Sessional Evaluation:  Univ. Exam Evaluation:  Total Marks: | 40  60  100 |
| Objectives: | * To introduce the broad perceptive of cloud architecture and model * To understand the concept of Virtualization and familiar with the lead players in cloud. * To understand the features of cloud simulator and apply different cloud programming model as per need. * To design of cloud Services and explore the trusted cloud Computing system | | |

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| Course Outcomes | Upon successful completion of the course, the students will be able to: | |
| CO1 | Know basic idea about cloud computing vision and its developments. |
| CO2 | Classify the Virtualization techniques in Cloud. |
| CO3 | Compare categories of cloud and summarize their collaborative services. |
| CO4 | Detail the internal components and structure of Cloud models. |
| CO5 | Use Aneka Cloud Application Platform in developing cloud applications. |
| CO6 | Outline the various real time applications & cloud platforms in industry. |
| Course Content | UNIT-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.  UNIT-II  **Virtualization**: Introduction, Characteristics of Virtualized Environment, Taxonomy of  Virtualization Techniques, Virtualization, and Cloud computing.  UNIT-III  **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.  UNIT-IV  **Security:** data security, network security, host security.  **Disaster** **Recovery**: Disaster Recovery Planning, Disasters in the Cloud, Disaster Management.  UNIT-V  **Aneka:** Cloud Application Platform Framework Overview, Anatomy of the Aneka Container, From the Ground Up: Platform Abstraction Layer, Fabric Services, Foundation Services, Application Services.  UNIT-VI  **Cloud Applications:** Scientific Applications – Health Care, Geoscience, Biology. Business And Consumer Applications - CRM and ERP, Social Networking, Media Applications, and Multiplayer Online Gaming. | |
| Text Books &  Reference  Books | **TEXT BOOKS:**   1. Mastering Cloud Computing by RajkumarBuyya, Christian Vecchiola, S.Thamarai Selvi from TMH 2013. 2. George Reese, “Cloud Application Architectures: Building Applications and Infrastructure in the Cloud” O'Reilly   **REFERENCE BOOKS:**   1. Toby Velte, Anthony Velte, Robert Elsenpeter, “Cloud Computing, A Practical Approach”, TMH, 2009. | |
| E-Resources | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> | |

**CO-PO Mapping:** 3-High Mapping, 2-Moderate Mapping, 1-Low Mapping, - -Not Mapping

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|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | - | - | - | - | - | - | - | - | - | - | - | - |
| **CO2** | - | 2 | - | - | - | - | - | - | - | - | - | - |
| **CO3** | - | 2 | - | - | - | - | - | - | - | - | - | - |
| **CO4** | - | - | - | - | - | - | - | - | - | - | - | - |
| **CO5** | 1 | - | - | - | - | - | - | - | - | - | - | - |
| **CO6** | - | 1 | - | 1 | - | 3 | - | - | - | - | - | - |