



# MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

## COURSE CONTENT

ENTERPRISE CLOUD CONCEPTS								
II Semester: CSE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
2225819	Foundation	L	T	P	C	CIA	SEE	Total
		3	0	0	3	40	60	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 45			
Prerequisites: UG level course in enterprise cloud concepts								

### Course Overview:

This course introduces the fundamentals of cloud computing and enterprise cloud architecture, including service models (IaaS, PaaS, SaaS) and deployment models (public, private, hybrid). It covers virtualization, containerization, cloud storage, networking, and security in enterprise environments.

### Course Objectives:

1. To understand the fundamental concepts, architecture, and service models of cloud computing.
2. To study cloud-enabling technologies such as virtualization, data centers, and distributed computing infrastructure.
3. To learn various cloud computing mechanisms, resource management techniques, and cloud security concepts.
4. To analyze cloud architectures and enterprise transformation strategies using cloudbased solutions.
5. To develop the ability to design, implement, and manage cloud-centric enterprise applications and services.

### Course Outcomes: After Completion of the Course, Students should be able to

1. Demonstrate the setup and configuration of virtualization platforms such as VirtualBox or VMware with multiple operating systems.
2. Install compilers and execute applications within virtualized environments.
3. Develop and deploy simple web applications using cloud platforms such as Google App Engine.
4. Perform file and resource sharing between virtual machines and understand network configuration
5. Launch and manage cloud instances using open-source platforms such as TryStack/OpenStack and configure Hadoop for distributed computing.

## **UNIT - I:**

### **Understanding Cloud Computing:**

Origins and influences, Basic Concepts and Terminology, Goals and Benefits, Risks and Challenges.

### **Fundamental Concepts and Models:**

Roles and Boundaries, Cloud Characteristics, Cloud Delivery Models, Cloud Deployment Models

## **UNIT - II:**

### **Cloud-Enabling Technology:**

Broadband Networks and Internet Architecture, Data Center Technology, Virtualization Technology

### **CLOUD COMPUTING MECHANISMS:**

**Cloud Infrastructure Mechanisms:** Logical Network Perimeter, Virtual Server, Cloud Storage Device, Cloud Usage Monitor, Resource Replication

## **UNIT - III:**

**Cloud Management Mechanisms:** Remote Administration System, Resource Management System, SLA Management System, Billing Management System, Case Study Example Cloud Computing Architecture

**Fundamental Cloud Architectures:** Workload Distribution Architecture, Resource Pooling Architecture, Dynamic Scalability Architecture, Elastic Resource Capacity Architecture, Service Load Balancing Architecture, Cloud Bursting Architecture, Elastic Disk Provisioning Architecture, Redundant Storage Architecture, Case Study Example

## **UNIT - IV:**

### **Cloud-Enabled Smart Enterprises**

Introduction, Revisiting the Enterprise Journey, Service-Oriented Enterprises, Cloud Enterprises, Smart Enterprises, The Enabling Mechanisms of Smart Enterprises

### **Inspired Enterprise Transformations**

Introduction, The Cloud Scheme for Enterprise Success, Elucidating the Evolving Cloud Idea, Implications of the Cloud on Enterprise Strategy, Establishing a Cloud-Incorporated Business Strategy

## **UNIT - V:**

### **Transitioning to Cloud-Centric Enterprises**

The Tuning Methodology, Contract Management in the Cloud

### **Cloud-Instigated IT Transformations**

Introduction, Explaining Cloud Infrastructures, A Briefing on Next-Generation Services, Service Infrastructures, Cloud Infrastructures, Cloud Infrastructure Solutions, Clouds for Business Continuity, The Relevance of Private Clouds, The Emergence of Enterprise Clouds

### **TEXT BOOKS:**

1. Erl Thomas, Puttini Ricardo, Mahmood Zaigham, Cloud Computing: Concepts, Technology & Architecture 1st Edition,
2. Pethuru Raj, Cloud Enterprise Architecture, CRC Press

### **REFERENCE BOOKS:**

1. James Bond, The Enterprise Cloud, O'Reilly Media, Inc.

### **ELECTRONIC RESOURCES:**

1. <https://www.geeksforgeeks.org/cloud-computing/cloud-computing-tutorial/>
2. <https://www.simplilearn.com/tutorials/cloud-computing-resources/cloud-computinglessons>
3. <https://www.coursera.org/learn/cloud-computing-concepts>
4. <https://cloudsvers.com/tutorials>

### **MATERIALS ONLINE:**

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. E-Learning Readiness Videos (ELRV)