Th-3 CLOUD COMPUTING

(Common to CSE/IT)

Theory	**4 Periods per week**	**Internal Assessment**	**20 Marks**
Total Periods	**60 Periods**	**End Sem Exam**	**80 Marks**
Examination	**3hours**	**Total Marks**	**100Marks**

A. Topic wise distribution of periods

Sl. No.	Topics	Periods
1	INTRODUCTION TO CLOUD COMPUTING	05
2	CLOUD COMPUTING ARCHITECTURE	08
3	SCALABILITY AND FAULT TOLERANCE	08
4	CLOUD MANAGEMENT AND VIRTUALISATION TECHNOLOGY	08
5	VIRTUALISATION	08
6	CLOUD SECURITY	08
7	CLOUD COMPUTING SECURITY ARCHITECTURE	05
8	MARKET BASED MANAGEMT OF CLOUDS	05
9	HADOOP	05
	TOTAL	**60**

B.RATIONALE:

Cloud computing is one of the emerging topics in Information Technology. It is the biggest buzz in the computer world. Cloud computing means you can deliver applications to your end user faster than ever, without investing in new infrastructure, training new personnel or licensing new software. It is a practical approach to experience direct cost benefits and easy to use for the users.

C. Objective : After completion of this course the student will be able to**:**

- Understand the basic concepts of cloud and cloud architecture.
- Learn about different cloud computing technology.
- Learn about the service levels for cloud applications.
- Provides a practical exposure to professionals intending to work in cloud computing environment.
- Understand the map reduce model and its application.
- Learn about basic concepts of software productivity in a cloud.
- Understand web services and platforms.

D. DETAIL CONTAINS:

1. Introduction To Cloud Computing

1.1. Historical development
1.2. Vision of Cloud Computing
1.3. Characteristics of Cloud computing
1.4. Cloud computing Reference model
1.5. Cloud computing environment
1.6. Cloud Service requirements
1.7. Cloud and Dynamic Infrastructure
1.8. Cloud Adoption
1.9. Cloud applications

2. Cloud Computing Architecture

2.1. Introduction
2.2. Cloud Reference Model
2.3. Types of Clouds
2.4. Cloud Interoperability and standards
2.5. Cloud computing Interoperability use cases
2.6. Role of standards in Cloud Computing environment

3. Scalability and Fault Tolerance

3.1. Introduction
3.2. Scalability and Fault Tolerance
3.3. Cloud solutions
3.4. Cloud Ecosystem
3.5. Cloud Business process management
3.6. Portability and Interoperability
3.7. Cloud Service management
3.8. Cloud Offerings
3.9. Testing under Control
3.10. Cloud service Controls
3.11. Virtual desktop Infrastructure

4. Cloud Management and Virtualisation Technology

4.1. Create a virtualised Architecture
4.2. Data Centre
4.3. Resilience
4.4. Agility
4.5. Cisco Data Centre Network architecture
4.6. Storage
4.7. Provisioning
4.8. Asset Management
4.9. Concept of Map Reduce
4.10. Cloud Goverance
4.11. Load Balancing
4.12. High Availability
4.13. Disaster Recovery

5. Virtualisation

5.1. Virtualisation
5.2. Betwork Virtualisation
5.3. Desktop and Application Virtualisation
5.4. Desktop as a service
5.5. Local desktop Virtualisation
5.6. Virtualisation benefits
5.7. Server Virtualisation

5.8. Block and File level Storage Virtualisation
5.9. Virtual Machine Monitor
5.10. Infrastructure Requirements
5.11. VLAN and VSAN

6. Cloud Security

6.1. Cloud Security Fundamentals
6.2. Cloud security services
6.3. Design Principles
6.4. Secure Cloud software requirements
6.5. Policy Implementation
6.6. Cloud Computing Security Challenges

7. Cloud Computing Security Architecture

7.1. Architectural Considerations
7.2. Information Classification
7.3. Virtual Private Networks
7.4. Public Key and Encryption Key management
7.5. Digital certificates
7.6. Key management
7.7. Memory Cards
7.8. Implementing Identity Management
7.9. Controls and Autonomic System

8. Market Based Management of Clouds

8.1. Cloud Information security vendors
8.2. Cloud Federation, charactrization
8.3. Cloud Federation stack
8.4. Third Party Cloud service
8.5. Case study

9. Hadoop

9.1. Introduction
9.2. Data Source
9.3. Data storage and Analysis
9.4. Comparison with other system

Coverage of Syllabus upto Internal Exams (I.A.)
Chapter 1,2,3,4

BOOKS Recommended:-

Sl .No.	Name of the Author	Title of the Book	Name of the Publisher
1	Pankaj Sharma	Cloud Computing	Katson Books
1	Dr. U.S. Pandey , Dr. KavitaChoudhary	Cloud Computing	S. Chand
2	PrasantkumarPattnaik, ManasRanjanKabat , Souvik Pal	Fundamentals of Cloud Computing	Vikas