



Faculty of: **Computer Science**

Course: **Bachelor of Science Information Technology**

Semester: **IV**

Subject Code: **4CS04TCC1 (Elective – II)**

Subject Name: **Cloud Computing**

Sr. No	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
				Th	Tu	Pr			Theory				Practical				Total
									Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
4	2	4CS04TCC1	Cloud Computing	4	-	-	4	4	15(SE)	1 Hr.	70	2½ Hrs.	-	-	-	-	100
									15(CE)	-							

**AIM:** Students will learn the fundamental ideas behind cloud computing, the evolution of the paradigm its applicability; benefits, as well as current and future challenges;

## COURSE CONTENTS

### Unit I Introduction of Cloud Computing

**10 Hrs.**

- Cloud Computing, Essential Characteristics of cloud computing,
- Benefits of cloud computing and disadvantages of cloud computing
- Desired features of a cloud computing
- Architectural Influences of Cloud computing
- Cloud Deployment Models: Public Clouds, Community Clouds, Private Clouds, Hybrid Clouds

### Unit II Cloud Computing Service models

**12 Hrs.**

- Cloud computing reference model
- Cloud computing Service models: IaaS, PaaS, and SaaS
- IaaS: Infrastructure as a service
- PaaS: Platform as a service
- SaaS: Software as a service
- Cloud Service Provider
- Challenges and Risk

### **Unit III Cloud Architecture and Migrating into a Cloud**

**06 Hrs.**

- Exploring the Cloud Computing Stack
- Connecting to the Cloud
- Introduction to migrating into a cloud
- The seven step model of migrating to a cloud

### **Unit IV Cloud Platforms in Industry**

**10 Hrs.**

- Amazon web services
  - Compute services
  - Storage services
- Google AppEngine
  - Architecture and core concepts
  - Application life cycle
- Microsoft Azure: core concepts

### **Unit V Cloud Computing Security Architecture**

**10 Hrs.**

- Architectural Considerations
- Trusted Cloud Computing
- Secure Execution Environments and Communications
- Identity Management and Access Control
- Autonomic Security

### **REFERENCE BOOKS:**

1. Cloud Computing: Principles and Paradigms, Rajkumar Buyya, Wiley India Edition
2. Cloud Computing: A Practical Approach, Anthony T. Velte, Tata McGrawHill
3. Cloud Computing Bible, Barrie Sosinsky, Wiley India
4. Cloud Security : A Comprehensive Guide to Secure Cloud Computing, Ronald L. Krutz  
Wiley Publishing, Inc
5. Mastering Cloud Computing Rajkumar Buyya,

- **SWAYAM/NPTEL Link**

<https://archive.nptel.ac.in/courses/106/105/106105167/>