

## DETAILED SYLLABUS

### UNIT - I CLOUD COMPUTING BASICS (Book 1)

7 Hrs

**1.1 Cloud computing overview** – Origins of Cloud computing – Cloud components - Essential characteristics – on-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , measured service

**1.2 Architectural influences** – High-performance computing , utility and enterprise grid computing , Autonomic computing , Service consolidation , Horizontal scaling Web services ,High scalability architecture.

**1.3 Cloud scenarios(Book 2)**– Benefits - scalability , simplicity , vendors ,security. Limitations – Sensitive information , Application development – Security concerns - privacy concern with a third party , security level of third party , security benefits. Regularity issues – Government policies

### UNIT - II CLOUD COMPUTING ARCHITECTURE & SERVICES (Book 1)

12 Hrs

**2.1 Cloud architecture:** Cloud delivery model – SPI framework, SPI evolution, SPI vs. traditional IT Model.

**2.2 Software as a Service (SaaS):** SaaS service providers – Web Services – Web 2.0 – Web Operating system -Google App Engine, Salesforce.com and google platform – benefits – Operational benefits, Economic benefits – Evaluating SaaS

**2.3 Platform as a Service ( PaaS ):** Cloud Plat form & Management – Computation & Storage - PaaS service providers – Right Scale – Salesforce.com – Rackspace – Force.com – services and benefits.

**2.4 Infrastructure as a Service ( IaaS):** IaaS service providers –Amazon EC2 , GoGrid – Microsoft soft implementation and support – Amazon EC service level greement – recent developments – benefits.

**2.5 Cloud deployment model :** Public clouds – private clouds – community clouds – hybrid clouds - Advantages of Cloud computing.

### UNIT - III Virtualization

12 Hrs

**3.1 Virtualization :** Virtualization and cloud computing - Need of virtualization – cost , administration , fast deployment , reduce infrastructure cost – limitations

**3.2 Types of hardware virtualization:** Full virtualization - partial virtualization – para virtualization

**3.3 Desktop virtualization** – Software virtualization – Memory virtualization – storage virtualization – data virtualization – network virtualization.

**3.4 Microsoft Implementation** – Microsoft Hyper V – VMware features and infrastructure – Virtual Box - Thin client

### UNIT - IV STORAGE MANAGEMENT

11 Hrs

**4.1 Storage Network:** Architecture of storage, analysis and planning. Storage network design considerations;

**4.2 NAS and FC SANs,** hybrid storage networking technologies (ISCSI, FCIP, FCoE), design for storage virtualization in cloud computing,

**4.3 File systems or object storage.**

### UNIT - V SECURITY IN THE CLOUD

8 Hrs

**5.1 Understanding Cloud Security - Securing the Cloud - Security service boundary: CSA Cloud Reference Model - Securing Data – Brokered cloud storage access - Storage location and tenancy – Encryption (Book 3)**

**5.2 Cloud Computing Security Challenges - Security Policy Implementation - Policy Types - Virtualization Security Management - Virtual Threats (Book 1)**

## REFERENCES:

<b>Sl.No.</b>	<b>Title</b>	<b>Author</b>	<b>Publisher</b>
1	CLOUD SECURITY: A Comprehensive Guide to Secure Cloud Computing	Ronald L. Krutz Russell Dean Vines	Wiley Publishing, Inc
2	Cloud Computing A practical Approach 2008 Edition	Cloud Computing A practical Approach	Tata McGrawHill
3.	Cloud Computing Bible	Barrie Sosinsky	Wiley Publishing, Inc