

**INFORMATION STORAGE
SECURITY AND MANAGEMENT
(ELECTIVE-III)
(Common to CSE & IT)**

Course Code :13CT1134

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Pre requisites: Information Storage Systems.

Course Educational Objectives:

The main objective of the course is to expose the students to different Backup, Archive and Replication, Business Continuity, Local Replication, Cloud Computing, Securing Storage Infrastructure. Upon completion of this course, the student should be able to:

- ❖ Describe about Information availability and Business continuity.
- ❖ Describe the backup/recovery topologies.
- ❖ Describe local replication technologies and their operation.
- ❖ Describe remote replication technologies and their operation.
- ❖ Describe processes and technologies for identifying, analyzing, and mitigating security risks in storage infrastructure.

Course Outcomes:

At the end of the course the student will be able to

- ❖ Understands the Information availability and Business continuity.
- ❖ Understand storage infrastructure, backup/recovery topologies.
- ❖ Understands local replication technologies and their operation.
- ❖ Understands remote replication technologies and their operation
- ❖ Learn about processes and technologies for identifying, analyzing, and mitigating security risks.

UNIT-I**(12 Lectures)****INTRODUCTION TO BUSINESS CONTINUITY:**

Information Availability, BC Terminology, BC Planning Life Cycle, Failure Analysis, Business Impact Analysis, BC Technology Solutions, Concept in Practice: EMC PowerPath.

BACKUP AND ARCHIVE:

Backup Purpose, Backup Considerations, Backup Granularity, Recovery Considerations, Backup Methods, Backup Architecture, Backup and Restore Operations Backup Topologies, Backup in NAS Environments, Backup Targets, Data De duplication for Backup, Backup in Virtualized Environments, Data Archive, Archiving Solution Architecture, Concepts in Practice: EMC NetWorker, EMC Avamar, and EMC Data Domain.

UNIT-II**(12 Lectures)****LOCAL REPLICATION:**

Replication Terminology, Uses of Local Replicas, Replica Consistency, Local Replication Technologies , Tracking Changes to Source and Replica, Restore and Restart Considerations, Creating Multiple Replicas, Local Replication in a Virtualized Environment, Concepts in Practice: EMC TimeFinder, EMC SnapView, and EMC RecoverPoint.

UNIT-III**(12 Lectures)****REMOTE REPLICATION:**

Modes of Remote Replication, Remote Replication Technologies, Three-Site Replication, Data Migration Solutions, Remote Replication and Migration in a Virtualized Environment, Concepts in Practice: EMC SRDF, EMC MirrorView, and EMC Recover Point.

CLOUD COMPUTING:

Cloud Enabling Technologies , Characteristics of Cloud Computing, Benefits of Cloud Computing, Cloud Service Models, Cloud Deployment Models, Cloud Computing Infrastructure, Cloud Challenges, Cloud Adoption Considerations, Concepts in Practice: Vblock.

UNIT-IV**(12 Lectures)****SECURING THE STORAGE INFRASTRUCTURE:**

Information Security Framework, Risk Triad, Storage Security Domains,

And Security Implementations in Storage Networking, Securing Storage Infrastructure in Virtualized and Cloud Environments, Concepts in Practice: RSA and VMware Security Products.

UNIT-V

(12 Lectures)

MANAGING THE STORAGE INFRASTRUCTURE:

Monitoring the Storage Infrastructure, Storage Infrastructure Management Activities, Storage Infrastructure Management Challenges, Developing an Ideal Solution, Information Lifecycle Management, Storage Tiering, Concepts in Practice: EMC Infrastructure Management Tools.

APPLICATIONS & EXERCISES:

Application I/O Characteristics , Parallel SCSI , SAN Design Exercises , Information Availability Exercises , Network Technologies for Remote Replication.

TEXT BOOKS:

1. G.Somasundaram, A.Shrivastava: EMC Corporation, “*Information Storage and Management: Storing, Managing and Protecting Digital Information in Classic, Virtualized and Cloud Environment*”, 2nd Edition, Wiley Publication, 2012.
2. Robert Spalding, Storage Networks : “*The Complete Reference*”, 1st Edition, Tata McGraw Hill/Osborne, 2003.

REFERENCES:

1. Marc Farley, “*Building Storage Networks*”, 2nd Edition, Tata McGraw Hill/Osborne, 2001.
2. Meeta Gupta, “*Storage Area Network Fundamentals*”, 1st Edition, Pearson Education, 2002.

