INFORMATION STORAGE SECURITY AND MANAGEMENT

(Professional Elective-IV)/ (Common for CSE,IT)

COURSE CODE: 15CT1134

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Pre-requisites: Information Storage systems, Information Security.

COURSE OUTCOMES:
At the end of the course the student shall be able to

CO1: Design business continuity plan.
CO2: Select a local replication technology to provide data backup.
CO3: Distinguish between different remote replication technologies.
CO4: Discuss security issues and how to mitigate them.
CO5: Select appropriate storage management software.

UNIT-I **(8-10 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 Power Path.
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 **(8-10 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.
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.

UNIT-III **(8-10 Lectures)**

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 **(8-10 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 **(8-10 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.

REFERENCES:

1. Robert Spalding, *"Storage Networks: The Complete Reference"*, 1st Edition, Tata McGraw Hill/Osborne, 2003.
2. Meeta Gupta, *"Storage Area Network Fundamentals"*, 1st Edition, Pearson Education, 2002.

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