

For Examinations to be held in the December 2020, 2021, 2022

Class: M.Tech 1st Semester

Branch: CSE

Course Title: Information Storage Management

Course No.: MCSE102

Duration Exam: 3 HRS

L	T	P	C	Theory (External)	Internal
3	-	-	3	75	25

Course Overview: This course provides a comprehensive introduction to Data Storage technology Fundamentals. Participants will gain knowledge of the core logical and physical components that make up a Storage Systems Infrastructure.

Course Outcomes: By the end of the course students shall be able to understand:

CO102.1	The explosion in demand from businesses for highly available and secure access to data.
CO102.2	The Storage systems and infrastructure architectures and solutions available to support business needs
CO102.3	The key tasks in successfully managing and monitoring a data storage infrastructure.

Detailed Syllabus

UNIT 1: Introduction: Meeting Today's Data Storage Needs, Value of data to business, Challenges in data storage and data management, List the solutions available for data storage. **(06 hrs)**

UNIT 2: Data Storage Solutions: Different media and available solutions to address data storage, Describe the role of each solution relative to data storage needs, Direct Attached Storage (DAS) environment, Network Attached Storage (NAS) environment, Storage Area Networks(SAN). **(07 hrs)**

UNIT 3: Data Centre Infrastructure: List the core elements of a Data Centre infrastructure, Describe the role of each element to support business activities, Requirements for storage systems to optimally support business activities, challenges and activities in managing storage systems in a data centre. **(08 hrs)**

UNIT 4 : Storage System Architecture: Logical components, file systems, volume management, Host Bus Adapters, key protocols and concepts used by each component, physical components of a connectivity environment , logical components of a connectivity environment, concept of RAID and components, Cache Structure and data flow through cache, cache algorithms. **(08 hrs)**

UNIT 5: Information Availability: Downtime, Business Continuity (BC) and Disaster Recovery (DR), Define RTO, RPO, and RGO, Database backup methods, Back Up Topologies for LAN and SAN based backups, local information availability, technologies within the data centre, potential areas of information vulnerability between local and remote data centres, Disaster Recovery. **(06 hrs)**

Note: The Question paper will comprise of 7 questions of 15 marks each uniformly distributed over the entire syllabus based on teaching hours. The candidates shall have to attempt any 5 questions.

Suggested Books:

- EMC Corporation, "Information Storage and Management: Storing, Managing, and Protecting Digital Information", Wiley, India, 2010
- Marc Farley, —Building Storage Networks||, Tata McGraw Hill ,Osborne, 2001.
- Robert Spalding, —Storage Networks: The Complete Reference, Tata McGraw Hill, Osborne, 2003.