



FORMAT FOR COURSE CURRICULUM

Course Title: DATA STORAGE SOLUTIONS

Course Level: PG

Course Code: CSIT722

Credit Units:

| L | T | P/S | SW/F W | TOTAL CREDIT UNITS |
|---|---|-----|-----------|--------------------------|
| 3 | - | - | - | 3 |

Course Objectives:

To keep the pace with the exponential growth of information, there is a growing need for the skilled information management professionals.

This course gives insight into:

1. Challenges and solutions for data storage and data management.
2. Intelligent storage systems, Storage networking environments (FC-SAN, IP-SAN, NAS, CAS, and DAS).
3. Business continuity and disaster recovery
4. Storage security and virtualization
5. Managing and monitoring the storage infrastructures

Pre-requisites: Fundamental knowledge of computers, operating systems and networking

Student Learning Outcomes:

The student will be able:

- To **analyze** a comprehensive understanding of all segments of storage technology.
- To **prepare** themselves about many products of EMC through an understanding of technology concepts and principles.
- To **infer** about the information needs, how to be store and protect, optimized and managed.

Course Contents/Syllabus:

| | Weightage (%) |
|--|----------------------|
| Module I : Introduction to Storage Technology and Management | 20% |
| Descriptors/Topics Meeting Today's Data Storage Needs, Evolution of Storage Technology and Architecture, Data Storage Solutions, Data Center Infrastructures, Key challenges in managing Information | |
| Module II: Storage Systems Architecture Intro | 20% |
| Descriptors/Topics Host Environment, Components of a Host, Connectivity, Physical Disks, RAID Arrays (RAID 0, RAID 1, RAID 3, RAID 4, RAID 5, RAID 6, RAID 0+1, RAID 1+ 0), Disk Storage Systems, Data Flow Exercise | |
| Module III : Networked Storage Environments | 25% |
| Descriptors/Topics Direct Attached Storage (DAS) and Introduction to SCSI, Storage Area Network (SAN) and Introduction to Fiber Channel, Zoning, FC Topologies, Network Attached Storage (NAS) and its Protocols, NAS implementations, IP SAN, Content – Addressed Storage (CAS), Storage Virtualization | |
| Module IV : Business Continuity, Monitoring & Managing the Storage Infrastructure | 15% |
| Descriptors/Topics Introduction to Business Continuity, Backup & Recovery, BC Local Replication, BC Remote Replication. Managing the Data Center, Monitoring the Storage Infrastructure, Storage Management Activities, Storage Infrastructure Management Challenges, Developing the Ideal Solution | |
| Module V: Securing Storage & Virtualization | 20% |
| Descriptors/Topics Securing the Storage Infrastructures, Security Implementations in Storage Networking, Virtualization Technologies | |

Pedagogy for Course Delivery:

The course will be delivered through lectures in the classroom. Instructor has liberty to adopt any other method like case studies, research work for increasing knowledge about subject.

Assessment/ Examination Scheme:

| | | |
|-----------------------|---------------------------------|------------------|
| Theory L/T (%) | Lab/Practical/Studio (%) | Total (%) |
| 100 | - | 100 |

Theory Assessment (L&T):

| Continuous Assessment/Internal Assessment | | | | | End Term Examination |
|--|-----------|-----------|-----------|----------|-----------------------------|
| Components (Drop down) | CT | HA | VV | A | EE |
| Weightage (%) | 10% | 10% | 5 | 5 | 70 |

Text & References:**Text Book:**

- Information Storage and Management – Storing, Managing and Protecting Digital Information By G. Somasundaram, AlokShrivastava, EMC Education Services, Wiley Publishing, Inc.

References:

- Storage Technology Foundations, EMC Education Services.
- Network Security: The Complete Reference, Roberta Bragg, Mark Rhodes-Ousley, Keith Strassberg, et al - Tata McGraw-Hill presents.

Any other Study Material:

- <https://www.snia.org/sites/default/files/sniavirt.pdf>
- <http://support.citrix.com/servlet/KbServlet/download/17979-102-641247/IntroductionStorageTechnologies.pdf>