

COURSE CODE	COURSE TITLE	L	T	P	C
1152IT148	ENTERPRISE STORAGE SYSTEMS	3	0	0	3

UNIT I - STORAGE SYSTEMS

Data Classification, Storage Evolution and Data Center infrastructure. Host components, Connectivity, Storage, and Protocols. Components of a disk drive, physical disk and factors affecting disk drive performance. RAID level performance and availability considerations. Components and benefits of an intelligent storage system.

UNIT II - STORAGE NETWORKING TECHNOLOGIES

Direct-Attached Storage (DAS) architecture, Storage Area Network (SAN) attributes, components, topologies, connectivity options and zoning. FC protocol stack, addressing, flow control, and classes of service. Networked Attached Storage (NAS) components, protocols, IP Storage Area Network (IP SAN) iSCSI, FCIP and FCoE architecture. Content Addressed Storage (CAS) elements, storage, and retrieval processes. 29 M.Tech (Cloud Computing)-2013

UNIT III - VIRTUALIZATION

Block-level and file-level storage virtualization technology, virtual provisioning and cloud computing.

UNIT IV - BUSINESS CONTINUITY

Business Continuity measurement, terminologies, and planning. Backup designs, architecture, topologies, and technologies in SAN and NAS environments. Local and Remote replication using host and array-based replication technologies such as Synchronous and Asynchronous methods.

UNIT V - STORAGE SECURITY AND MANAGEMENT

Storage security framework and various security domains. Security implementation in SAN, NAS and IP-SAN networking. Monitoring and Storage management activities and challenges

TEXT / REFERENCES BOOKS

1. EMC, Information Storage and Management [ISBN: 978-0470294215]
2. Richard Barker, Paul Massiglia 2002, Storage area network essentials, Wiley New York [ISBN: 978-0471034452]
3. Ulf Troppens, Rainer Erkens, Wolfgang Mueller-Friedt, Rainer Wolafka, Nils Haustein, Storage Networks Explained [ISBN: 978-0470741436]
4. W. Curtis Preston 2002, Using SANs and NAS, O'Reilly & Associates Sebastopol, Calif. [ISBN: 978-0596001537]
5. Himanshu Dwivedi 2006, Securing storage, Addison-Wesley Upper Saddle River, NJ [ISBN: 978-0321349958]