INFORMATION STORAGE AND MANAGEMENT (ISM)

COURSE OVERVIEW
Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure, including virtual environments. It provides comprehensive learning of storage technology, which will enable you to make more informed decisions in an increasingly complex IT environment. ISM builds a strong understanding of underlying storage technologies and prepares you to learn advanced concepts, technologies, and products. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, IP-SAN, NAS, Object-based and unified storage; business continuity solutions such as backup, replication, and archive; the increasingly critical area of information security; and the emerging field of cloud computing. This unique, open course focuses on concepts and principles which are further illustrated and reinforced with EMC examples.

SECTION 1: STORAGE SYSTEM
Chapter 1: Introduction to Information Storage
This chapter introduces evolution of storage architecture, key data center elements, virtualization, and cloud computing.

Chapter 2: Data center environment
This chapter details key data center elements – Host (or compute), connectivity, storage, and application in both classic and virtual environments. It also focuses on components, addressing scheme, and performance of mechanical and solid-state drives. This chapter also introduces host access to storage via direct attached and network-based options.

Chapter 3: RAID
This chapter focuses on RAID implementations, techniques, and levels along with the impact of RAID on application performance.

Chapter 4: Intelligent Storage System
This chapter details components of intelligent storage systems. It also covers virtual storage provisioning and intelligent storage system implementations.

SECTION 2: STORAGE NETWORKING TECHNOLOGIES
Chapter 5: Fibre Channel Storage Area Network (FC SAN)
This chapter focuses on FC SAN components, connectivity options, and topologies including access protection mechanism ‘zoning’. It also elaborates on FC protocol stack, addressing, and other fabric services. SAN-based virtualization and VSAN technology is also covered here.

Chapter 6: IP SAN and Fibre Channel over Ethernet (FCoE)
This chapter covers iSCSI and FCIP protocols for storage access over IP network. Converged protocol FCoE and its components are also detailed.

Chapter 7: Network Attached Storage (NAS)
This chapter focuses on file sharing technology using NAS and covers its benefits, components, and implementations. File level storage virtualization is also discussed.

Chapter 8: Object based and Unified Storage
This chapter focuses on emerging areas of object-based storage and unified storage solutions. Content addressed storage (CAS) as an implementation of object-based solution is also covered.

EDUCATION SERVICES
SECTION 3: BACKUP, REPLICATION AND ARCHIVE

Chapter 9: Introduction to Business Continuity
This chapter focuses on information availability and business continuity solutions in both virtualized and non-virtualized environments.

Chapter 10: Backup and Archive
This chapter focuses on backup and recovery in both virtualized and non-virtualized environments. It also covers deduplication technology to optimize data backups along with archival solutions to address the fixed content storage requirements.

Chapter 11: Local Replication
This chapter focuses on local replication of data along with data restore and restart considerations.

Chapter 12: Remote Replication
This chapter focuses on remote replication technologies in virtualized and non-virtualized environments. It also covers three-site replication and continuous data replication options.

SECTION 4: CLOUD COMPUTING

Chapter 13: Cloud Computing
This chapter focuses on cloud computing, its benefits, characteristics, deployment models, and services. It also covers cloud challenges and migration considerations.

SECTION 5: SECURING AND MANAGING STORAGE INFRASTRUCTURE

Chapter 14: Securing the Information Infrastructure
This chapter focuses on framework and domains of storage security along with covering security implementation at storage networking. It also covers security in virtualized and cloud environments.

Chapter 15: Managing the Information Infrastructure
This chapter focuses on storage infrastructure monitoring and management. It covers storage tiering, information lifecycle management (ILM), and cloud service management activities.

Student profile for success
Students who have completed courses on the following topics will have an added advantage in comprehending the content of the ISM course.
1. Computer systems and architectures
2. Networking technologies
3. Operating system
4. Database Management Systems