ITE6005 Enterprise Operating systems

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Pre-Requisite :

Objectives :

- To learn the Advanced Operating systems
- To gain knowledge on mainframe OS, z /OS and virtualization concepts
- To gain insight on to the IBM System x3950 Server & Memory features
- To know about General Parallel File System(GPFS)

Expected Outcome :

Upon Completion of the course, the students should be able to:

- Acquire a complete overview of mainframe operating systems
- work with virtualization products like vmware, xen and so on
- work on various file system and memory management

Module	Topics	L Hrs	SLO
1	**Introduction to mainframe environment** Mainframe OS – An evolving architecture -Uses of mainframe computers-Typical mainframe workloads- mainframe hardware systems-System design -Processing - Disk devices -Clustering - Basic shared DASD- sysplex.	7	2
2	**z/OS Overview** z/OS-Overview of z/OS facilities-Virtual storage and other mainframe concepts - workload management-I/O and data management-Supervising the execution of work in the system -Crossmemory services-Defining characteristics of z/OS- comparison of z/OS and UNIX-Data setsAccess Methods -Data set Record Format - DASD-Types of data sets -Virtual Storage Access Method - Role of DFSMS.	8	2
3	**Virtualization** Virtualization-Virtualization concepts -Emulation versus virtualization-Hosted solutions versus hypervisor solutions -OS virtualization -Full virtualization versus paravirtualization-32-bit versus 64-bit support-Dual core CPUs-Virtualization futures.	8	5
4	**Virtual Storage Management (VSM)** z/OS Memory/Storage Types- z/OS Memory Managers-31-Bit VSM-64-Bit VSM/RSM –End to-end scheduling -	5	5
5	**Scheduler** Overview of Tivoli Workload Scheduler -Tivoli Workload Scheduler network-Tivoli Workload Scheduler architecture-Tivoli Workload Scheduler network -Tivoli Workload Scheduler workstation -End-to-end scheduling	6	5
6	**General Parallel File System(GPFS)** GPFS Overview and features- Operating system and file systems with multiplatform GPFS – Security	6	5
7	Network Shared Disk (NSD) creation considerations- GPFS considerations- Tivoli Storage Manager for GPFS	3	5
8	**Expert Talk**	2	
	Total Lecture Hours # Mode: Flipped Class Room, [Lecture to be videotaped], Use of physical and computer models to lecture, Visit to Industry, Min of 2 lectures by industry experts	45	

Text Books

1. "Introduction to the New Mainframe: z/OS Basics", Redbooks, March 2011.

Reference Books

1. "Implementing the IBM General Parallel File System (GPFS) in a Cross- platform Environment", June 2011.
2. Charles Patrick Crowley, Operating Systems: A Design-oriented Approach, Irwin Publications.
3. "Virtualization on the IBM System x3950 Server", June 2006.
4. Getting Started with IBM Tivoli Workload Scheduler , IBM Redbooks, 2006.

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