CST - 602 (Virtualization Technology)

Second Semester

Course Description

Course Code Number	CST-602	Course Title	Virtualization Technology
Semester Hours	Total 2 hours per week Lecture 1 hour per week Lab 1 hour per week	No. of Credit Units	1
Prerequisite	None	Course Coordinator	Dr. Kyar Nyo Aye Faculty of Computer Science
Course Length	15 Weeks	Type of Instruction	Lecture + Lab

Course Objective

This course intended to assist the students in realizing the impact and changes of virtualization on IT service management.

Course Outline

Implement and support virtualization of clients and servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers.

Learning Outcomes

After learning the course the students should be able to
- Understanding Virtual machines and Implementation of virtual machines
- Understanding virtualization and various ways of using virtualization
- Implementation of private cloud platform using virtualization
- Use virtual machines of public cloud platform

Text Book

[1] Virtualization for DUMMIES (3rd HP SPECIAL EDITION) by Bernard Golden

Reference Books

[1] Virtualization Essentials by Matthew Portnoy
[2] Virtualization A Manager's Guide by Dan Kusnetzky

Course Organization

Student participation in this course will involve the following activities:
- Attending the lectures
- Lab
- Presentation
- Exam

Assessment Plan for the Course (30%)

Paper Exam	10 %
Presentation	10 %
Class Participation	5 %
Lab Test	5 %

Lecture Plan

CST-602   **: Virtualization Technology**   **Second Semester**
Period   **: 15 Periods for 15 weeks (50 minutes for 1 period)**

No.	Chapter	Page	Period	Detailed Lecture
	Chapter 1: **Why You Need Virtualization**	**1-10**	**1**	Overview
1	Why Virtualization Is Hot Virtualization Increases Business Agility Virtualization Increases IT Operational Flexibility Virtualization Reduces IT Operations Costs Quality of Service High Availability Disaster Recovery End-User Manageability and Security	4 5 6 6 8 8 8 9	1	Explain why virtualization is used in business and benefits of virtualization technology.
	Chapter 2: Understanding Virtualization Technologies	**13-21**	**4**	
2	Server Virtualization	13-16	1	Explain how to difference between the concept of Traditional Server and Server virtualization with diagram
3	Storage Virtualization I/O Virtualization Network Virtualization Client Virtualization	16-21	1	Explain each type of technology with examples: eg. VPN,NAT(for network virtualization)
4	Building a New Virtual Machine & Loading Windows & Linux into a VM Connecting VMs in virtual environment		2	Installation virtual machine and explain how a VM works and their configuration options
	Chapter 3: Understanding Virtualization Use Cases	**23-33**	**4**	
5	Studying Server Consolidation Development and Test Environments Private Cloud Computing Quality of Service	23 24 26 26-31	1	Explain how to change the server environments with virtualization Details explanation load balancing, fault tolerance which are impact at IT operational
6	IT Operational Flexibility Helping with Disaster Recovery	31-32 33	1	
7	Installation one type of Hypervisor and test the features of QoS		2	

No.	Chapter	Page	Period	Detailed Lecture
	Chapter 4: Game-Changing Results from Virtualization	**35-45**	**3**	
8	Converged Infrastructure	36	1	Explain how to look at infrastructure from a virtualization perspective and how to find out how virtualization can help applications and IT operation with example application
9	Consolidated IT Operations Management	43	1	
10	Client Virtualization from Desktop to Data Center	45	1	
	Chapter 6: Ten Steps to Your Next Virtualization Project	**53-58**	**3**	
11	Evaluate Your Use Cases	54	1	
	Review Your Operations Organization Structure	55		
	Define Your Architecture	55		
	Select Virtualization Software	56		
	Select Virtualization Hardware	56		
	Perform a Pilot Implementation	56		
	Implement Your Production Environment	57		
	Put Governance and Policy in Place	57		
	Manage Your Virtualized Infrastructure	58		
12	Presentation for one type of Hypervisor Software for each group		2	