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1. SEMINAR RUBRIC

Seminar Title

: Moving Confidently In the Cloud

Total Curriculum Hours

: 40 hours   (8 hours per day x 5 days)

Pre-requisite/s Needed

: Preferable CCNA

2. SEMINAR AIMS AND SYNOPSIS

This seminar introduces cloud computing with reference to the underlying delineating technologies in consolidation, virtualization and automation. It provides an understanding of Data Center evolution, progressively from initial stages, infrastructure consolidation and the use of unified input/output, to storage, network and desktop virtualization, and eventually to the orchestration of virtualized resources with intelligent automation.

The aim of the seminar is to equip participants with the skills and knowledge to appreciate and apply various technological concepts which constitute cloud computing. At the end of the seminar, using the skills and knowledge acquired, participants should be able to implement a configuration which would be representative of certain basic components found in a cloud.

3. SEMINAR SCOPE AND LEARNING OUTCOMES

General Learning Outcomes

Participants should be able to:

(1) explain cloud computing concepts at a fundamental level

(2) describe the technologies which comprise cloud computing

(3) configure certain basic hardware constituent components of a cloud

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3.1 Topics/ Themes

General Learning Outcome Participants should be able to:	Specific Learning Outcome Participants should be able to:	Topic/Theme (as applicable)
1 explain cloud computing concepts at a fundamental level	1.1 identify the fundamental concepts used in cloud computing, including the use of hypervisors, consolidation, virtualization and automation; 1.2 describe the models used in cloud computing; 1.3 identify the stages in the evolution of data centers;	Fundamentals of Cloud Computing
2 describe the technologies which comprise cloud computing	2.1 describe the constituent categories in infrastructure consolidation, namely, branch IT consolidation, network consolidation and server consolidation, and their benefits; 2.2 describe unified input/output, the use of encapsulation technologies and input/output consolidation; 2.3 describe storage virtualization, the use of Virtual SANS and Virtual Servers 2.4 describe network virtualization, virtual device context, virtual routing and forwarding, Cisco layer 2 design solutions with the use of Virtual Switch System (VSS), Virtual Port-Channel (vPC) and Ethernet Host Virtualizer. 2.5 describe server virtualization and its types, management of Virtual Machine (VM) resources, scaling up of VMs, desktop virtualization and delivery models; 2.6 describe the evolution steps towards private/hybrid cloud, the elements of private cloud computing, service orchestration and differentiated services. 2.7 describe Cisco Intelligent Automation for Cloud, namely with Cisco Cloud Portal, Cisco Tidal Enterprise Orchestrator (TEO), Cisco Tidal Server Provisioner and Cisco Tidal Adapter for Cisco UCS Manager.	Cloud Computing Technologies
3 configure certain basic hardware constituent components of a cloud	3.1 identify the steps on the use of Cisco Vblock 3.2 configure the basic hardware constituent components of a cloud so as to demonstrate the concept of VM Migration or teleportation.	Configuring a Cloud

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4. LEARNING ACTIVITIES AND TEACHING METHODS

Lectures will focus on the foundational concepts and technologies used in cloud computing. These concepts will be further reinforced by the use of e-learning videos demonstrating the concepts, and practical sessions allowing hands-on configuration of basic hardware constituent components. Case studies will be used in tutorials to enhance the understanding and application of the concepts learnt.

	Session	Topic	Lecture	Video	Tutorial
Day1	AM (4 hrs)	Overview	2.5 hours	30 mins	2 x 30 min discussions
	PM (4 hrs)	Consolidation	2.5 hours	30 mins	2 x 30 min discussions
Day2	AM (4 hrs)	Virtualization	2.5 hours	30 mins	2 x 30 min discussions
	PM (4 hrs)	Virtualization	2.5 hours	30 mins	2 x 30 min discussions
Day3	AM (4 hrs)	Virtualization	2.5 hours	30 mins	2 x 30 min discussions
	PM (4 hrs)	Automation	2.5 hours	30 mins	2 x 30 min discussions
Day4	AM (4 hrs)	Automation	2.5 hours	30 mins	2 x 30 min discussions
	PM (4 hrs)	VM Migration	**Practical Lab** Introduction (1 hour) Demo (30 mins) Hands-on (2 hours) Summary (30 mins)		
Day5	AM (4 hrs)	Lab / Cisco Visit			
	PM (4 hrs)				

5. FORMATIVE ASSESSMENT

Formative assessments include:
- diagnostic questions during formal lessons;
- discussions on various case studies during formal lessons;

Instructors will make use of these opportunities to provide feedback on the participants' progress. Participants would be able to identify gaps in their understanding and clarify their queries on the subject.

6. SUMMATIVE ASSESSMENT

There is no summative assessment.

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7. CONTRIBUTORS
   This seminar is a community-led, Cisco-enabled initiative.

   1) Institute of Technical Education, Gremar Sempio
   2) Institute of Technical Education, Vincent Poh
   3) Nanyang Polytechnic, Simon Eng
   4) Republic Polytechnic, Ivan Wee
   5) Singapore Polytechnic, Francis Teo
   6) Singapore Polytechnic, Lau Chung Meng
   7) Temasek Polytechnic, Chia Tien Yau
   8) Temasek Polytechnic, Lim Chee Yong
   9) Temasek Polytechnic, Simon Ngeow
   10) Temasek Polytechnic, Yap Chern Nam
   11) Cisco Systems, Ng Tock Hiong
   12) Cisco Systems, Belmont Chia
   13) Cisco Systems, Ong Poh Seng

About Cisco

Cisco (NASDAQ: CSCO) is the worldwide leader in networking that transforms how people connect, communicate and collaborate. Information about Cisco can be found at http://www.cisco.com. For ongoing news, please go to http://newsroom.cisco.com. Cisco products are supplied in Singapore by Cisco Systems International, BV.