MASTER COURSE OUTLINE

Prepared By: Tom Willingham | Date: October 2018

COURSE TITLE

Intro to Virtualization

GENERAL COURSE INFORMATION

Dept.: CS	Course Num: 106	(Formerly:)
CIP Code: 11.0901	Intent Code: 21	Program Code: 527
Credits: 5		
Total Contact Hrs Per Qtr.: 66		
Lecture Hrs: 44	Lab Hrs: 22	Other Hrs:
Distribution Designation: General Elective (GE)		

COURSE DESCRIPTION (as it will appear in the catalog)

This introductory course is an overview and hands-on exploration of virtualization in desktop, server, and cloud environments. Concepts covered include an introduction to virtualization technologies and how to deploy and manage a virtual server environment. Course topics include virtualization concepts and terms, installing and deploying virtual machines using Hyper-V, VM Ware, and XenServer, and implementing a secure virtual environment.

PREREQUISITES

CS 105

TEXTBOOK GUIDELINES

Textbook to be determined by CS Faculty. (Example: *Practical Virtualization Solutions: Virtualization from the Trenches;* Hess & Newman)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Describe basic functions of Microsoft and Linux operating systems
2. Describe virtualization basic terms and concepts
3. Compare virtualization technologies
4. Install and deploy virtual machines using several virtualization technologies
5. Implement a secure virtual environment
6. Monitor virtual server environment
7. Perform system troubleshooting and maintenance

INSTITUTIONAL OUTCOMES

IO1 **Communication**: Students will be able to communicate clearly and effectively within a workplace context

IO3 **Human Relations/Workplace Skills**: Students will be able to demonstrate teamwork, ethics, appropriate safety awareness and/or workplace specific skills

COURSE CONTENT OUTLINE

1. Virtualization Basics and Technology Choices

a) History of virtualization
b) Practical aspects of virtualization and cloud computing
c) Compare virtualization technologies
d) VMWare ESXi
e) Citrix Systems XenServer
f) Microsoft Hyper-V

2. Hardware's Role in Virtual Infrastructure
   a) Form-factor choices
   b) Aligning hardware with software
   c) Cloud computing
   d) Storage virtualization
   e) Network virtualization
   f) I/O virtualization
3. Applying Virtualization
   a) Configuring dedicated servers with virtualization
   b) Desktop virtualization
   c) Network and storage virtualization
   d) System troubleshooting and maintenance
   e) Securing the VM

DEPARTMENTAL GUIDELINES *(optional)*

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DIVISION CHAIR APPROVAL **DATE**