COURSE SYLLABUS
NET235: Virtualization

Course Description
Virtualization is a strategic technology which forms the basis for private and public cloud systems, and reduces overall IT cost. In this course students will study virtualization architecture, platforms, technologies, and develop knowledge and proficiency with virtualization, along with best practices.

General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	40/0/80
Prerequisite(s)	NET209
Co-requisites (s)	None
Course Developer(s)	Lars Amoo, M.S.
Date Approved / Last Review	November 2013 / Feb 2018

Learning Outcomes
- Explain virtualization in corporate data center environments.
- Distinguish between physical and virtual devices.
- Justify implementation of virtualization.
- Evaluate virtualization technologies.
- Deploy virtual machines

Instructional Methods Employed in this Course
- Lecture and reading assignments
- Hands-on exercises and labs
- Team environment
- Build on prior knowledge and experience of students to enhance richness of class activities.

Information Resources for this Course

Textbooks

Portnoy, Matthew. Virtualization Essentials, Second Edition. Sybex. 2016. ISBN-10: 1119267722. ISBN-13: 978-1119267720.

Raj Samani, Brian Honan, Jim Reavis. CSA Guide to Cloud Computing, Syngress. Waltham, MA. 2015. ISBN978-0-12-42015-5

Other Materials

Dan Kusnetzky Virtualization A Manager's Guide. Kusnetzky Group LLC. 2011. O'Reilly Media Inc. Sebastopol California. ISBN: 978-1-449-30645-8

Ted Simpson, Jason Novak Hands-On Virtual Computing Course Technology Cengage Learning Boston MA ISBN-13:978-1-4354-8100-8, ISBN-10:1-4354-8100-3

Web Site Readings

http://www.virtualizationreview.com

http://social.technet.microsoft.com/wiki/contents/articles/705.wiki-virtualization-portal.aspx

http://www.vmware.com/technical-resources/security/index.html

http://technet.mirosoft.com/en-us/library/dd56113.aspx

http://support.citrix.com/article/CTX120716

Table/Topics & Assignments

Types of Assignments:

Lecture -

Considered Lecture Hours

Classroom Discussion -

Considered Lecture Hours

In Class Critique -

Considered Lecture Hours

Delivering Oral Presentations -

Considered Lecture Hours

In Class (IC) Exercise -

Considered Lecture Hours

Reading -

Considered Homework (HW), work done outside of class

WebClass lesson (non-online courses) -

Considered HW, work done outside of class

Lab Work -

Considered Lab Hours

Quiz, Midterm or Final -

Considered Lecture Hours

Week 1						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 1A	Introduction to Virtualization	1.3				
LEC 1B	Introduction to Hypervisors	1.3				
LEC 1C	Introduction to Virtual Machines	1.4				
HW 1A	Read Chapter 1, 2, 3 (50 pages) Evaluated by Quiz 1			5		
Total Week 1		4	0	5		

Week 2						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 2A	Creation of Virtual Machines	1.3				
LEC 2B	Installing Linux/Windows in a VM	1.3				
LEC 2C	CPU Management	1.4				
HW 2A	Read Chapters 4, 5, 6, 7 (80 pages) Evaluated by Quiz 1			8		
Total Week 2		4	0	8		

Week 3						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
IC EX 3A	Quiz 1	1			50	
LEC 3A	Managing Memory	1				
LEC 3B	Managing Storage	1				
LEC 3C	Managing Networking	1				
HW 3A	Read Chapters 8, 9, 10 (50 pages) Evaluated by Quiz 2			5		
Total Week 3		4	0	5	50	

Week 4						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
IC EX 4A	Quiz 2	0.5			50	

LEC 4A	Copy a Virtual Machine	1				
LEC 4B	Additional Devices Management	1				
LEC 4C	Availability in Virtual Environments	1				
LEC 4D	Introduction to Applications	0.5				
ELP 4A	Read Chapter 11, 12, 13, 14 (70 pages) Evaluated by Midterm Exam			7		
Total Week 4		4	0	7	50	

Week 5

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Reviews	2				
EXAM 5A	Midterm Exam	2			150	
HW 5A	Chapter Reviews 1 – 14 (130 pages) Evaluated by Midterm			13		
Total Week 5		4	0	13	150	

Week 6

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Introduction to Cloud Computing	2				
LEC 6B	Selecting a Cloud Service Provider	2				
HW 6A	Read Chapters 1 & 2 (30 pages) Evaluated by Quiz 3			3		
HW 6B	Final Project Paper			7		
Total Week 6		4	0	10	0	

Week 7

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Cloud Threat Landscape	2				
LEC 7B	Secure Mobile Cloud	2				
HW 7A	Read Chapters 3 & 4 (50 pages) Evaluated			5		

	by Quiz 3					
HW 7B	Final Project Paper			5		
Total Week 7		4	0	10	0	

Week 8

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
IC EX 8A	Quiz 3	1			50	
LEC 8A	Moving into the Cloud, Certification for CSPs, and Privacy	1				
LEC 8B	Certification for CSPs	1				
LEC 8C	Privacy in the Cloud	1				
HW 8A	Read Chapters 5-7(60 pages)			6		
HW 9B	Final Project Paper			4		
Total Week 8		4	0	10	50	

Week 9

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
IC EX 9A	Quiz 4	1	--	--	50	End of week 9
LEC 9A	The Cloud Security Alliance	1				
LEC 9B	Cloud Research	1				
LEC 9C	The Future of the Cloud	1				
HW 9A	Read Chapters 8-10 (50 pages)			5		
HW 9C	Final Project Paper			5	300	
Total Week 9		4	0	10	350	

Week 10

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
IC 10A	Final Exam Review	0.5				
EXAM 10A	Final Exam	1			200	
HW 10B	Final Project Presentation	3.5			150	
Total Week 10		4	0	0	350	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Introduction to Virtualization	4	--	5
2	Hypervisors & Virtual Machines	4	--	8
3	Deployment of Virtual Machines	4	--	5
4	CPU Management	4	--	7
5	Course Review / Mid Term	4	--	13
6	Memory and Storage Management	4	--	10
7	Virtual Networks and Configurations	4	--	10
8	Virtual Machine and Devices Management	4	--	10
9	Virtual Machines Availability and Applications	4	--	12
10	Course Review / Final	4	--	0
Total		40	--	80

Table/Point Breakdown

Week	Assignment	Possible Points	Percent of Grade
3	Quiz 1	50	5%
4	Quiz 2	50	5%
5	Midterm Exam	150	15%
7	Quiz 3	50	5%
8	Quiz 4	50	5%
9	Final Project	300	30%
10	Final Presentation	150	15%
10	Final Exam	200	20%
Total		1000	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:
The Coleman University guidelines for the assignment of grades to total points earned is as follows:

Percent	Letter Grade	Grade Points
94-100	A	4.0
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3.0
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2.00
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1.00
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
70 or above	PASS	0

Requirements

Assignments: All assignments (including projects, lab work, quizzes and exams) must be completed as scheduled. The following will apply to late assignments:

- 1-24 hours after due date = 20% off point value
- 25-48 hours after due date = 60% off point value
- 49+ hours after due date = No points given

If an assignment equals less than 5 points, no points will be given for late work. If there are extenuating circumstances, the student must submit a written explanation to the department Senior Instructor. Upon evaluation, points will be given according to the Senior Instructor's discretion.

Coleman University Policy on Academic Dishonesty:

Academic dishonesty is cause for dismissal from Coleman University. Presenting another person's ideas, methods, course work, or test answers with the intention that they be taken as one's own is theft of a special kind. It defrauds the originator of the work, the institution, its graduates, its students, and its future students.

The student has full responsibility for the authenticity of all academic work and examinations submitted. A student who appears to have violated this policy must submit to a hearing with the reporting instructor and the associate dean. If it is determined that a violation occurred, the matter will be referred to an Officer of the University with recommendations for an appropriate penalty. The student may be dismissed, suspended, or given another penalty.

Coleman University employs the plagiarism software known as Turnitin. Students are expected to use this tool in an appropriate manner with the sole purpose to support their own academic endeavors at Coleman University. Turnitin account information can not be shared with anyone. Contact your instructor if you have any questions about plagiarism related issues.

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA

Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.