COURSE SYLLABUS**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 / March 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 |  |  |  |  |
| LEC 1B | Introduction to Hypervisors | 1 |  |  |  |  |
| LEC 1C | Introduction to Virtual Machines | 2 |  |  |  |  |
| 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 |  |  |  |  |
| LEC 2B | Installing Linux/Windows in a VM | 1 |  |  |  |  |
| LEC 2C | CPU Management | 2 |  |  |  |  |
| 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 by Quiz 3 |  |  | 5 |  |  |
| 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 |  |  | 7 | 300 |  |
| Total Week 9 |  | 4 | 0 | 12 | 350 |  |
| Week 10 |  |  |  |  |  |  |
| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
| IC 10A | Final Exam Review | 1 |  |  |  |  |
| EXAM 10A | Final Exam | 1 |  |  | 200 |  |
| HW 10B | Final Project Presentation | 2 |  |  | 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 |
| N/A | CR | 0 |
| 59 or below | F | 0 |
| N/A | 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.