

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CTEC 165

Credit Hours: 3-3-0

Course Title: Introduction to Virtualization

Course Prerequisites: None

Textbook: Ascend Education. Ascend Training Series: Virtualization. Ascend Education LLC. ISBN: 978-0-692-17616-0

Course Description: This course introduces students to the benefits and drawbacks of virtualization related to performance, maintenance, security, and efficiency. Students will also learn about the different types of virtualization and how it relates to networks, storage, servers, data, desktops, and applications. Students will be introduced to VMware vSphere and Microsoft Hyper-V and learn to create and configure virtual machines.

Learning Outcomes:

At the end of this course, the student will or will be able to:

- A. describe Virtualization Architecture Concepts;
- B. deploy Linux and Windows Operating Systems within Virtual Machines;
- C. configure Network Settings between Virtual Machines; and
- D. manage a Virtual Machine Infrastructure.

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

1. explain the differences between a Type 1 and Type 2 Hypervisor (A);
2. describe the advantages of Virtual Machines in a production environment (A);
3. describe hardware and software requirements for Virtualization (A);
4. describe how hardware is accessed in a Virtual Operating System (A);
5. list Disaster Recovery and Fault Tolerance methods provided by Hyper-V and VMWare products (A);
6. describe the advantages and uses of Clustering (A);
7. install a Linux Operating System within VirtualBox, Hyper-V, VMWare Workstation and ESXi (B);
8. install a Windows Operating System within VirtualBox, Hyper-V, VMWare Workstation and ESXi (B);
9. configure integration services within the Guest OS (Linux/Windows) for smoother interaction with the Hypervisor (B);
10. network the Guest and Host Machines together (C);
11. network multiple Guest Machines together (C);
12. isolate Guest Machines within their own virtual network (C);
13. add and configure virtual NICs and Switches within Hyper-V and VMWare products (C);
14. create Snapshots/Checkpoints for VirtualBox and Hyper-V (D);

15. create and manage virtual disks (D);
16. navigate vCenter to manage an ESXi instance and contained Virtual Machines (D);
17. navigate Hyper-V to manage Virtual Machine configurations (D);
18. move virtual machines between Hyper-V Hosts (D);
19. move virtual machines between ESXi Hosts using vCenter Server (D); and
20. review virtual desktop infrastructure (VDI) (D)

Course Requirements: A student must successfully complete the course with an average of 70% or above on the combined learning outcomes. Each student is expected to attend classes regularly; excessive unexcused absences constitute grounds for suspension (refer to the student handbook for attendance policies).

Course Grading Scale:

- A = 90 - 100
- B = 80 - 89
- C = 70 - 79
- D = 60 - 69
- F = 0 - 59

Attendance Policy: The college attendance policy is available at:
<http://catalog.bpcc.edu/content.php?catoid=5&navoid=369>

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams, and/or clinical fees.

Nondiscrimination Statement:

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

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