Course Prefix and Number: CTEC 165   **Credit Hours:** 3-3-0

Course Title: Introduction to Virtualization

Course Prerequisites: None

Textbook: None

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:
- To pass the course, student must achieve a course average of 70% or above.
- Students must have access to a computer (not mobile device), Microsoft Office, and the Internet to complete the assignments. Computer, software, and the Internet are available to students on campus during scheduled computer lab times and in the Learning Commons located in the BPCC Library.
- Students are required to use BPCC's LMS and are encouraged to use the BPCC Library to research topics and employment opportunities.

Course Grading Scale:
- A = 90 - 100
- B = 80 - 89
- C = 70 - 79
- D = 60 - 69
- F = 0 – 59

Attendance Policy:
Each student is expected to attend class regularly; excessive unexcused absences constitute grounds for suspension. Refer to the student handbook for Attendance Policy.

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.

Coordinator for SECTION 504 AND ADA
Angie Cao, Student and Disability Services Specialist
Disability Services, F-254
6220 East Texas Street
Bossier City, LA 71111
Phone: 318-678-6511
Email: acao@bpcc.edu

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator
Teri Bashara, Director of Human Resources
Human Resources Office, A-105
6220 East Texas Street
Bossier City, LA 71111
Phone: 318-678-6056
Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.