Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CTEC 257   **Credit Hours:** 4-4-0

Course Title: CCNA III

Course Prerequisites: CTEC 256

Textbook(s) and Materials: This course will utilize the learning modules and materials provided by the Cisco Networking Academy at https://www.netacad.com.

Optional Book: Cisco Press. Enterprise Network, Security, and Automation v7, 1st Ed. 978-0-13-690653-7.

Course Description: Enterprise Networking, Security, and Automation (ENSA) is the third courses in the CCNA series. This course covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access along with the introduction of software-defined networking, virtualization, and automation concepts that support the digitalization of networks. Students gain skills to configure and troubleshoot enterprise networks, and learn to identify and protect against cyber security threats. They are introduced to network management tools and learn key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation. This course works to prep you for the CCNA certification.

Learning Outcomes:
At the end of this course, the student will:
   A. Recognize WANs and related technologies;
   B. Demonstrate setup and configuration of OSPF;
   C. Discuss vulnerabilities, threats, and exploits;
   D. Demonstrate configuration of ACL and NAT; and
   E. Discuss system scalability and automation and QoS.

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 how single-area OSPF operates in both point-to-point and broadcast multi-access networks (A, B);
   2. Verify single-area OSPFv2 in both point-to-point and broadcast multi-access networks (A,B);
   3. Explain how vulnerabilities, threats, and exploits can be mitigated to enhance network security (C, D, E);
   4. Explain how ACLs are used as part of a network security policy (C, D, E);
   5. Implement standard IPv4 ACLs to filter traffic and secure administrative access (C, D);
   6. Configure NAT services on the edge router to provide IPv4 address scalability (C, D);

7. Explain how WAN access technologies can be used to satisfy business requirements (A, E);
8. Explain how VPNs secure site-to-site and remote access connectivity (C, E);
9. Explain how networking devices implement QoS (B, E);
10. Implement protocols to manage the network (B, D)p
11. Explain the characteristics of scalable network architectures (E);
12. Troubleshoot enterprise networks (B, D);
13. Explain the purpose and characteristics of network virtualization (E) and;
14. Explain how network automation is enabled through RESTful APIs and configuration management tools (E).

Course Requirements:
1. A student must successfully complete the course with an average of 70% or above on the combined learning outcomes.
2. 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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