Course Prefix and Number: CTEC 155   **Credit Hours:** 3-3-0

Course Title: Network Essentials

Course Prerequisites: None

Textbook(s): CompTIA CertMaster Learn for Network+ (N10-008); ISBN: 978-1-64274-379-1 and CompTIA CertMaster Labs for Network+ (N10-008); ISBN: 978-1-64274-381-4

Course Description: Develop fundamental networking skills including an understanding of network hardware, installation, security, and troubleshooting in a corporate environment. Through classroom and hands-on activities, learn how computers exchange information and how the Internet functions. In addition, this class will help students gain the skills required for the nationally recognized CompTIA Network+ certification.

Learning Outcomes:
 At the end of this course, the student will:
- A. demonstrate a basic knowledge of networking terms used in the field;
- B. configure basic networking on a windows-based platform;
- C. recognize and correct common networking problems; and
- D. demonstrate an understanding of basic network security.

 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 functions and applications of various network devices (A);
2. compare and contrast the use of networking services and applications (A);
3. install and configure networking services/applications (B);
4. explain the characteristics and benefits of various WAN technologies (A);
5. install and properly terminate various cable types and connectors using appropriate tools (B);
6. differentiate between common network topologies (A);
7. differentiate between network infrastructure implementations (A);
8. given a scenario, implement and configure the appropriate addressing schema (A,B);
9. explain the basics of routing concepts and protocols (A);
10. identify the basic elements of unified communication technologies (A);
11. compare and contrast technologies that support cloud and virtualization (A);
12. given a set of requirements, implement a basic network (A,B);
13. given a scenario, use appropriate monitoring tools (B);
14. given a scenario, analyze metrics and reports from monitoring and tracking performance tools (C);
15. given a scenario, use appropriate resources to support configuration management (B,C);

Revised: 4/7/2022

16. explain the importance of implementing network segmentation (A);
17. given a scenario, install and apply patches and updates (B);
18. given a scenario, configure a switch using proper features (B);
19. install and configure wireless LAN infrastructure and implement the appropriate technologies in support of wireless capable devices (B);
20. compare and contrast risk related concepts (A,D);
21. compare and contrast common network vulnerabilities and threats (A,D);
22. given a scenario, implement network hardening techniques (D);
23. compare and contrast physical security controls (D);
24. given a scenario, install and configure a basic firewall (B,D);
25. explain the purpose of various network access control models (A,D);
26. summarize basic forensic concepts (D);
27. given a scenario, implement network troubleshooting methodology (C);
28. given a scenario, analyze and interpret the output of troubleshooting tools (C);
29. given a scenario, troubleshoot and resolve common wireless issues (C);
30. given a scenario, troubleshoot and resolve common copper cable issues (C);
31. given a scenario, troubleshoot and resolve common fiber cable issues (C);
32. given a scenario, troubleshoot and resolve common network issues (C);
33. given a scenario, troubleshoot and resolve common security issues (C);
34. given a scenario, troubleshoot and resolve common WAN issues (C);
35. analyze a scenario and determine the corresponding OSI layer (A);
36. explain the basics of network theory and concepts (A);
37. given a scenario, deploy the appropriate wireless standard (A,B);
38. given a scenario, deploy the appropriate wired connectivity standard (A,B);
39. given a scenario, implement the appropriate policies or procedures (A,B);
40. summarize safety practices (A);
41. given a scenario, install and configure equipment in the appropriate location using best practices (B);
42. explain the basics of change management procedures (A);
43. compare and contrast ports and protocols (A); and
44. given a scenario, configure and apply the appropriate ports and protocols (B).

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.

NICE Framework Categories:

Securely Provision (SP)   Operate and Maintain (OM)   Oversee and Govern (OV)
Protect and Defend (PR)   Analyze (AN)   Collect and Operate (CO)
Investigate (IN)

Specializations:
- Data Security Analysis
- Digital Forensics
- Health Care Security
- Industrial Control Systems – SCADA Security
- Secure Mobile Technology
- Secure Telecommunications
- Secure Cloud Computing
- Secure Embedded Systems
- Network Security Engineering
- Network Security Administration

CAE Knowledge Unit Mapping:
- Basic Networking (BNW)
- Digital Communications (DCO)
- Network Technology and Protocols (NTP)

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.