

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CTEC 210

Credit Hours: 3-3-0

Course Title: Advanced Network Topics

Course Prerequisite: CTEC 155

Textbook(s): Network Security, Firewalls, and VPN's, 3rd edition, by James Michael Stewart;
ISBN: 9781284183658

Course Description: This course will provide the student with an overview of advanced networking and current networking technologies. This overview includes, but not limited to, the design, implementation, and administration of small to medium size networks. It also includes the implementation of hardware to secure a network i.e. firewalls and IDS/IPS systems. The student will be introduced to current tools used to protect and troubleshoot networks.

Learning Outcomes:

At the end of this course, the student will:

- A. design, implement, and administrate a small to medium size network;
- B. using proper tools, troubleshoot common network issues;
- C. secure a network using current hardware technology (Firewalls, IDS/IPSs);
- D. secure a network using current software technology (Anti-Malware, Vulnerability Assessments);
- E. identify current trends in malware to protect a network; and
- F. design, implement, and administrate a syslog or SIEM system.

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. design and implement different types of network operating systems and how they are configured to supply network services (A);
2. troubleshoot common network issues using both hardware and software technologies (B);
3. install, configure, and administrate a firewall to protect a network (C);
4. install, configure, and administrate an IDS/IPS system and learn proper techniques for placement (C);
5. research and implement an ant-virus/malware solution in a network (D);
6. perform a vulnerability assessment in a network (D);
7. describe basic security methods and measures of protecting a network (E);
8. implement and manage a syslog server or SIEM system to monitor network logs and events (F).

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 Management Systems Security
- Digital Forensics
- Health Care Security
- Industrial Control Systems – SCADA Security
- Secure Cloud Computing
- Secure Embedded Systems
- Security Incident Analysis and Response
- Security Policy Development and Compliance
- System Security Administration
- Systems Security Engineering

CAE Knowledge Unit Mapping:

- Operating Systems Hardening (OSH)
- Windows System Administration (WSA)

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

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