



North Central State College

MASTER SYLLABUS

2025-2026

- A. Academic Division: Engineering Technology, Business & Criminal Justice Division
- B. Discipline: Information Technology - Cybersecurity
- C. Course Number and Title: ITEC2420 - Advanced Network Security
- D. Assistant Dean: Brooke Miller, M.B.A.
- E. Credit Hours: 3
Lecture: 2 hours
Laboratory: 2 hours
- F. Prerequisites: ITEC1430c (minimum grade of C-), ITEC1690 (minimum grade of C-)
- G. Last Course/Curriculum Revision Date: Fall 2025 Origin date: 11/27/2017
- H. Textbook(s) Title:
TestOut CyberDefense Pro
 - Publisher: TestOut
 - Copyright Year: 2021
 - ISBN: 9781935080732
- I. Workbook(s) and/or Lab Manual: An external USB 3.0 hard drive, 500 gigabytes or larger is required.
- J. Course Description: This course offers an introduction to virtual private networks (VPNs) and firewalls for securing a network. Various network security-related issues are introduced and examined. Different types of VPNs for securing data in an organizational setup are discussed as well as the benefits and architecture of a VPN and how to implement a VPN. Other topics include the utility of firewalls in tackling security problems and the limitations of a firewall. In addition, instruction is also given on how to construct, configure, and administer a firewall and the functionality of a firewall.
- K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & when it is met
Explain the fundamental concepts of network security.	Weeks 1,9 tests, labs, midterm/final exam, final project
Describe the fundamental functions performed by firewalls.	Weeks 1,2,7-9 tests, labs, midterm/final exam, final project
Describe the foundational concepts of VPNs.	Weeks 3-5, 15 tests, labs, midterm/final exam, final project
Recognize the impact that malicious exploits and attacks have on network security.	Weeks 5-6 tests, labs, midterm/final exam, final project
Describe network security implementation strategies and the roles each can play within the security life cycle.	Weeks 2,5-7 tests, labs, final exam, final project
Manage and monitor firewalls, and understand their limitations.	Weeks 5-9,15 tests, labs, final exam, final project
Assess firewall design strategies.	Weeks 7-9,15 tests, labs, final exam, final project
Apply firewall management best practices.	Weeks 7-10,16 tests, labs, final exam, final project

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00--59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences.

Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at

<https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf>



North Central State College
SYLLABUS ADDENDUM

Academic Division:	Engineering Technology, Business & Criminal Justice Division	Discipline:	Cybersecurity
Course Coordinator:	Dr. Mohamed Ghonimy		
Course Number:	ITEC-2420-920	Course Title:	Advanced Network Security
Semester / Session:	Fall 2025 / Session A	Start / End Date:	08/11/2025 thru 10/03/2025

Instructor Information

Name:	Dr. Mohamed Ghonimy	Credentials:	PhD
Phone Number:	4197554528	E-Mail Address:	mghonimy@ncstatecollege.edu
Office Location:	ATC-136	Office Hours:	M 1-4 pm, W 4:7 PM

I. Topical Timeline / Course Calendar (Subject to Change):

Weeks	Topics	Assignment	Due Date
1	1. Introduction 2. Vulnerability Response, Handling, and Management	Chapter 2 Labs Chapter 2 Quizzes	Sunday 8-17- 2025
2	3. Threat Intelligence and Threat Hunting	Chapter 3 Labs Chapter 3 Quizzes	Sunday 8-24- 2025
3	4. System and Network Architecture	Chapter 4 Labs Chapter 4 Quizzes	Sunday 8-31- 2025
4	5. Vulnerability Assessments	Chapter 5 Labs Chapter 5 Quizzes	Sunday 9-7- 2025
5	6. Network Security	Chapter 6 Labs Chapter 6 Quizzes	Sunday 9-14- 2025
6	7. Host-Based Attacks	Chapter 7 Labs Chapter 7 Quizzes Project	Sunday 9-21- 2025
7	8. Security Management 9. Post-Attack	Chapter 8 Labs Chapter 8 Quizzes Chapter 9 Labs Chapter 9 Quizzes	Sunday 9-28- 2025
8	10. Final Exam		Thursday 10-2-2025

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Qty	Points	Percentage
Quizzes	9	100	30
Labs	9	100	40
Project	1	100	15
Final Exam	1	100	15
Total			100

Course Number: ITEC-2420-920
Semester / Session: Fall 2025 / Session A

Course Title: Advanced Network Security
Start / End Date: 8/11/2025 – 10/3/2025

III. Examination Policy:

1. The reasons for which a student will be excused from taking an examination _____
 - a. Hospitalization (with documented verification)
 - b. Death in the immediate family (with documented verification)
 - c. Personal illness or illness in immediate family - (doctor's excuse required).
2. A student who misses an examination for any reason is responsible for fulfilling all course requirements during this time
 - a. Studying all the material that was covered during this time
 - b. Contact the instructor to discuss rescheduling options if the provided documents were accepted.
3. No makeup opportunity will be given for absences of unscheduled quizzes.

IV. Class Attendance and Homework Make-Up Policy:

1. Class attendance is necessary to acquire the knowledge required to be successful in this course.
2. Assignments submitted late without prior communication and approval may receive a **penalty 10% per day**, or may not be accepted for credit. This will be handled on a case-by-case basis
3. Students are responsible for _____
 - a. Study the course material every week as instructed in the syllabus.
 - b. Submitting homework by the due dates.

V. Classroom Expectations:

1. All homework assignments, quizzes and labs are expected to be submitted by their due dates as indicated in Canvas.
2. communicate proactively with your instructor if you need assistance.
3. If you anticipate or experience an issue that prevents you from submitting an assignment on time, you **must contact me via email** at mghonimy@ncstatecollege.edu **as soon as possible**, preferably before the deadline.