

Northeastern Illinois University
CyberSecurity - CS 360

Tentative Syllabus

This course explores fundamental principles for securing IT systems with hands-on experiments. This course includes security principles, virtual environments, and network services, core security principles of authentication and access control, web application security, certificates and public-key cryptography, and risk management. The tentative outline of the course is appended at the end of the syllabus.

Course Objectives: Upon completion of this course, the students should:

1. Describe the twelve basic security principles.
2. Understand security concepts of confidentiality, integrity, availability, and privacy.
3. Explain the various controls available for protection against common Internet attacks.
4. List and explain core security principles of authentication and access control.
5. Describe symmetric and public key cryptosystems.
6. Explain the advantages and disadvantages of symmetric and public key cryptosystems.

Instructor: Dr. Graciela Perera

Office hours: My office hours are Tuesday from 9 -10 am, and from 2-5 pm, and Wednesday from 4:30-5:30 pm in my office. Generally, my office door is always open and you are very much welcome to stop by. Other times can be done by appointment or by email.

Office: LWH-3048

Email: gperera at neiu dot edu

Class location and time: LWH 2054 on Tuesday and Thursday from 5:40 pm - 6:55 pm

Course materials:

The required textbook for this course is:

- David Basin, Patrick Schaller, and Michael Schlpfer, Applied Information Security: A Hands-on Approach, Springer; 2011 edition (October 28, 2011). ISBN-10: 3642244734 ISBN-13: 978-3642244735
- Course Online Resources:
 1. Course Content: Piazza <https://piazza.com>
 2. Course Labs: You must buy a \$89 licenses from Testout at <http://www.testout.com/home/student-resources/student-purchasing>. Use the following promotional code 14-232TA for LabSim Security Pro. Instructions can be found at <http://www.testout.com/home/student-resources/how-to-tutorials>
 3. Grades: D2L

Course Requirements:

- You are expected to work outside of the classroom at least 6 hours per week and participate actively in class.
- All Labs done in testout must be completed on assigned dates by each student. All labs must be submitted at the beginning of the class when they are due.
- A make-up evaluation for any item will be given only if the instructor is notified in advance. A legitimate reason must be given for a make-up evaluation. Evaluations do not have a make-up if answers have been posted. All make-up evaluations will be given in week 14 of the semester
- Class attendance is the responsibility of the student, and it is the student's responsibility to independently cover any material missed.

- Participation in class may be used in determining final grades.
- Extra credit activities without stating how much it is worth may be used in determining final grades. The instructor is not required to give any Extra credit activities to the students or grade them if he or she decides.

Grades: Several Labs, one midterm online, and one final exam online, weighted as follows:

Grade Items	Weight
Labs	40%
Midterm	30%
Final	30%

Weighted Average	Course Grade
90% or higher	A%
80% 89%	B%
70% 79%	C%
60% 69%	D%
0% 59%	F%

Late Work Policy: Each day¹ that your work is late the maximum possible grade decreases by one letter grade.

Academic Integrity: Students are required to abide by Northeastern Illinois University's academic integrity policy.

Web Link to Emergency Information: It is recognized that a safe university environment is a shared responsibility of faculty, staff, and students, all of whom are expected to familiarize themselves with and cooperate with emergency procedures. Emergency Procedures and Safety Information can be found on NEIUport on the MyNEIU tab.

Accessibility Center In compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973.

Northeastern provides reasonable accommodations for persons with disabilities by contacting the Accessibility Center.

¹includes business days, holidays and weekends

Northeastern Illinois University
CyberSecurity - CS 360

Tentative Outline

Week	Class	Laboratory	Topic
1	Introduction	Lab1 posted	Security goals:CIA
2	Introduction to Crytosystems Security Principles	Lab1 due Lab2 posted	Security concepts
3	Network Services	Lab2 due	Introduction to Linux
4	Network Services	Lab3 posted	Network Background
5	Authentication		ssh
6	Access Control	Lab3 due Lab4 posted	Users
7	Access Control	Lab4 due Lab5 posted	Permissions
8	Log Analysis	Lab5 due Lab6 posted	Intrusion detection
9	Attacking Web App	Midterm	SQL injection
10	XSS and Session Management	Lab6 due	Attacks HTTP

Week	Class	Laboratory	Topic
11	PK Crypto	Lab7 posted	Public keys
12	Certificate Authority		Key Distribution
13	Certificate Authority	Lab7 due	
14	Risk Management		Last day Labs due
15	Make-up		Review
16	Final Exam		Review