Computer Security Concepts

Bulletin Description

This course provides an introduction to topics in computer security. We will cover a breadth of topics including confidentiality, integrity, availability, and authentication policies, basic cryptography and cryptographic tools, concepts in software security and network security, and legal and ethical considerations for security. The course will incorporate discussion of topical events in the news.

General Course Information

Term: Department: Course Number:	Fall 2017 COMP 435
Time:	MW $3:35 - 4:50$
Location:	SN 014
Class Site:	https://cs.unc.edu/~csturton/courses/securityconcepts/
Piazza Site:	https://piazza.com/unc/fall2017/comp435/home/

Instructor Information

Name:	Cynthia Sturton
Office:	FB354
Email:	csturton@cs.unc.edu
	instr-435-cs@cs.unc.edu
Phone:	919-590-6020
Website:	https://www.cs.unc.edu/~csturton/
Office Hours:	Fri 3–5 or by appointment

Teaching Assistants & Learning Assistants

TA/LA	Office Hours	Location	Email
(TA) Fname Lname	TBD	TBD	instr-435-cs@cs.unc.edu
(LA) Fname Lname	TBD	TBD	instr-435-cs@cs.unc.edu

Textbook and Resources

The required textbook is Computer Security: Principles and Practice, 3rd Edition by Stallings and Brown ISBN: ISBN-9780133773927 Publisher: Pearson

The course schedule, announcements, and reading assignments will be posted on the class website (https://cs.unc.edu/~csturton/courses/securityconcepts/435-fa17.html).

Assignments will be submitted through Sakai.

The Piazza class site (https://piazza.com/unc/fall2017/comp435/home/) is the best place for you to ask your questions. Here are some guidelines.

- If you are wondering about something, ask a question!
- Answer other students' questions and refine existing answers.
- Be polite; be kind.
- Do not post code or ask others to post code.
- You may post privately to the instructors, but we reserve the right to make all or part of the post public if we feel the question is of general interest to the class. (If we do this, we won't reveal any personal information about the original poster, including their name.)
- We may post questions on Piazza that get emailed to the instructors if we feel the question is of general interest to the class. (Same as above.)

Course Description

In this class we will discuss the basic building blocks of confidentiality, integrity, and availability and will explore policies of authorization and authentication across various application domains. The course will cover aspects of security ethics and privacy and will incorporate discussion of related events in the news.

Target Audience

Building secure systems is the responsibility of all computer scientists, not just a few security specialists. To that end, this class is meant for computer science students who wish to develop basic literacy in security topics. Students who have already taken Introduction to Computer Security (COMP535) should not enroll in this class.

Prerequisites

This class is open to undergraduate CS students who have taken COMP410 and COMP411.

Goals and Key Learning Objectives

The goal of this class is to foster an understanding of, and the development of a security mindset. Along the way, students will learn about the types of security policies one might care about, how attackers can and

have thwarted security, sometimes in surprising ways, and what steps computer scientists and engineers can take to improve the security of their own systems.

Course Requirements

Classes will be organized around lectures, discussion, and in-class exercises. There will be assigned readings from the textbook as well as additional readings that will be posted on the class website. Textbook reading will be required. There will be four to five assignments over the course of the semester, multiple in-class exercises, two mid-terms, and a final exam.

Key Dates

Midterm exam: 9/20/2017 (tentative) Midterm exam: 10/30/2017 (tentative) Final exam: 12/9/2017, 4–7 P.M.

Grading Criteria

In-class exercises: 10% Lab assignments: 40% Midterms: 30% Final exam: 20%

Attendance and Participation

Attendance is required and counts toward the class participation grade. Attendance will be taken randomly throughout the semester.

Course Policies

No laptops or mobile devices in the classroom.

In-class exercises must be completed during the class period they are assigned. Late exercises will not be accepted.

Assignments will be submitted electronically. Late assignments will lose a third of a letter grade (A becomes A-, A- becomes B+, etc.) every 24 hours. In other words, assignments turned in within the first 24 hours **after** the deadline will lose one third of a grade; assignments turned in between 24 and 48 hours after the deadline will lose two thirds of a grade, and so forth.

The course final is given in compliance with UNC final exam regulations and according to the UNC Final Exam calendar.

Honor Code

Lab assignments are to be done individually. Students may discuss the lab with others, but may not share code.

In the course of this class we may discuss known vulnerabilities and attacks on computer systems. This is not an invitation to exploit these vulnerabilities in real systems. You may not attempt to break into any system that is not your own; you may not attempt to thwart or circumvent the security of any system that is not your own. Doing so is, at a minimum, a violation of the honor code and likely a violation of the law. Use caution; even accidental exploits may be subject to prosecution.

Course Schedule

The course schedule will be posted on the course website.

Disclaimer

The professor reserves to right to make changes to the syllabus, including exam dates. These changes will be announced and posted on the class website as early as possible.