COMP 535: Introduction to Computer Security

Bulletin Description

Principles of securing the creation, storage, and transmission of data and ensuring its integrity, confidentiality, and availability. Topics include access control, cryptography and cryptographic protocols, network security, and online privacy.

General Course Info

Term: Spring 2019
Department: COMP
Course Number: 535
Section Number: 001

Time: 11:15am – 12:30pm on MW indicated on the web page
Location: FB009
Website: http://www.cs.unc.edu/~reiter/courses/spr2019/

Instructor Info

Name: Prof. Michael Reiter
Email: reiter@cs.unc.edu
Web: http://www.cs.unc.edu/~reiter
Office Hours: Thu 9:30-10:30am (usually; check course web page)
Location: Brooks Building 352

Teaching Assistants

Name: Jacob Vosburgh
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Office hours: TBD
Location: TBD

Name: Ryan Gibson
Email: ragibson@live.unc.edu
Office hours: TBD
Location: TBD

Textbooks and Resources

There is no textbook for this class. The class lectures will be posted before class (usually), and some readings will be assigned. There are no plans to use Sakai.
Course Description

The goal of this course is to explain the principles behind computer security threats and countermeasures seen today or emerging soon. In particular, we will place an emphasis on principles and, where possible, rigor. Developing exploits will not be a focus of the class, though some assignments will involve implementing some attack code.

Target Audience

The target audience for this class is computer science students, especially those planning to go on to software architect/developer jobs in industry or to pursue graduate studies.

This class may be useful for system administrators, but the course will not focus on specific products or how to configure them.

Prerequisites

COMP 401, 410, 550, and COMP 283 or MATH 381; a grade of C or better is required in all four courses. Some other skills that would be useful are a basic understanding of probability; exposure to basic networking concepts; and some familiarity with the C and Java programming languages.

Goals and Key Learning Objectives (subject to change)

Through this course, students will accumulate familiarity with the following technologies: access control and authentication in distributed systems; cryptography and cryptographic protocols (mainly key exchange protocols); user authentication; software vulnerabilities and software engineering to reduce vulnerabilities; firewalls and related technologies; technologies to support online privacy; and selected advanced topics (time permitting).

Course Requirements

The nature of work in this class is primarily in working problems presented through quizzes and exams, and in solving a few programming assignments.

Key Dates

Exam dates and assignment due dates are unknown at this time and will be announced as soon as they are known. I plan to have a brief quiz roughly every other week.
Grading Criteria (subject to change, but roughly the following)

- 20% Quizzes
- 40% Programming assignments (probably 3-4 during the semester)
- 20% Midterm exam
- 20% Final exam

Course Policies

Class attendance, per se, is not evaluated. However, since there will be regular class quizzes, missing classes means missing quizzes; each missed in-class quiz, regardless of the reason for missing, receives a score of zero, and making up quizzes is not permitted. Each person will be permitted to drop his/her lowest quiz grade, however.

Late assignments will not be accepted unless otherwise stipulated.

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

Honor Code

The degree of collaboration permitted and the resources that should be used will be specified per assignment. However, the default policy is that no collaboration or resources except those specifically provided as part of the class (e.g., class notes and recommended readings) should be used in completing assignments. All work must be your own.

Course Schedule

The course schedule is posted at the course web page and will be updated often. Please check it frequently.

Disclaimer

The professor reserves to right to make changes to the syllabus, including assignment due dates and test dates. These changes will be announced as early as possible.