

ECE 3476: Computer and Network Security

Spring 2021

Electrical and Computer Engineering Department
Villanova University

Time/Place: M/W/F 11:30-12:20 pm, Zoom

Zoom Class Link: <https://villanova.zoom.us/j/93100681835>

Instructor: Dr. Danai Chasaki (danai.chasaki@villanova.edu)

Teaching Assistant: Christian Berger

Office: Tolentine Hall 435A

Office Hours: M/W: 10:00-11:30 am

Course webpage: <https://elearning.villanova.edu/webapps/login/>

Optional Textbook: Cryptography and Network Security: Principles and Practice (7th edition) by William Stallings; Prentice Hall

Course description

Computer security in the context of the Internet, including hands-on exercises and experiments in the areas of authentication, attacks and threats, email and communication, digital signatures and encryption, mobile devices, privacy, safe browsing and certificates.

Topics: network/operating system/web security introduction and current trends, wireless security, wireless attacks, operating system security, malware, buffer overflows, passwords/combinations/permutations/entropy, authentication, introduction to cryptography, hash functions, public key cryptography, network protocols, physical attacks

Student outcomes: 7 (i.e. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies)

Grades

The grades will be determined as follows:

HW assignments	10%
Midterm	25%
Final	25%
Project presentation	40%

The final grade will be norm-referenced (i.e., "curved").

Class Attendance

The primary teaching method will be class lectures and discussions. Class attendance is expected in every class.

Homeworks

The assignments will be posted on the class website and announced in class. Students will work individually; the due date for each assignment will be given at the time it is assigned. The assignments are due at midnight of the announced date or latest at noon the following day. Please note that the instructor and the TA reserve the right to check the submitted answers for “familiarity score”; please make sure to use your own words when you explain something.

Exams

There will be two exams, midterm and final, scheduled for March 10th and May 5-11th respectively. Details will be discussed one week prior to the exam.

Project Presentation /Report

Students are also expected to actively read a few state-of-the-art research papers for their project. The project will be completed in groups of 3. Students will research on a “hot” area and submit a 1-page proposal before the mid-term exam. Before the final exam submit a 5-page summary reporting your findings, and give one presentation to the rest of the class. The schedule of the presentation will be discussed at a later time. The presentations are meant to update fellow students on current trends, technologies, and issues that relate to network security. The grades of the presentation come from evaluation from fellow students in the class as well as the instructor. The topics will be distributed in class a few weeks before the midterm.

Late Submissions

Assignments are due as posted on the course web page (or stated in the syllabus). Late submissions will not be accepted unless by prior arrangement with the instructor. Scheduling conflicts regarding exams should be reported to the instructor immediately. In case of a medical emergency, late submission or a make-up exam can be requested if a note from a medical professional is provided.

Academic Integrity

The College of Engineering is committed to creating an environment of academic integrity and ethical decision-making that we hope is reflected in the actions of our students and graduates. As Villanova students, integrity is central to the University mission. As engineers, our code of conduct requires us to place honor and integrity at the forefront of everything we do. As engineering students, it is expected that you will begin to adopt these values and instill them into your work habits. Students violating the academic integrity policy will receive a zero on that assignment or exam and the violation will be reported to the Associate Dean for Academic Affairs.

The University's academic integrity policy can be found here:

<https://www1.villanova.edu/villanova/provost/resources/student/policies/integrity.html>.

The College of Engineering has adopted the following exam guidelines:

- Students must arrive before the start of the exam. Under exceptional circumstances a student may need to arrive late, but he/she can enter the exam no later than 5 minutes after the start of the exam.
- All cell phones must be turned off and stored away until the student exits the exam room.
- The official Villanova class attendance policy must be followed when requesting excuses for absences or lateness to an exam.
- Each student must write and sign the following statement, "*I have neither given nor received any unauthorized assistance in the completion of this exam.*"

Students with Disabilities

It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability please contact me after class or during office hours to make arrangements.

If you have a non-physical disability you need to register with the Learning Support Office by contacting 610-519-5176 or at learning.support.services@villanova.edu as soon as possible. Registration is needed to receive accommodations.

The Office of Disability Services collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The ODS provides Villanova University students with physical disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact and register with Gregory Hannah, advisor to students with disabilities @ 610-519-3209 or visit the office on the second floor of the Connelly Center.

* Note: The instructor reserves the right to make changes to this syllabus throughout the semester.