INTRODUCTION TO COMPUTER SECURITY
CSCE 4550.202 – FALL 2017

Course Instructor: Professor Mark D. Hoffman

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- Include CSCE 4550.202 in subject line
- Always use your official UNT email address

Class Location/Time: NTDP D215, Wed 5:30 – 8:20 PM

Office Hours: *By Appointment Only*

Instructional Assistant: Shashaank Bomule

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Office Hours: TuTh 12 PM to 2 PM

Textbook: *Security in Computing, 5th Edition*, Pfleeger, Pfleeger, & Margulies, Prentice Hall, 2015, ISBN 978-0-13-408504-3.

Reference Textbook: *Introduction to Computer Security*, Matt Bishop, Pearson, 2005, ISBN 0-321-24744-2.

Prerequisites: CSCE 3600

Blackboard This course will use Blackboard, a Web-based course management system, to distribute course materials, communicate and collaborate online, post grades and submit assignments. You are responsible for checking the Blackboard course site regularly for class work and announcements.

COURSE DESCRIPTION

The aim of this course is to introduce the concepts and principles of computer security and privacy. It covers theory and practice of computer security and privacy including OS and network security, security threats and countermeasures against them, cryptography, risk analysis and data privacy.

COURSE OUTCOMES

Course outcomes are measurable achievements to be accomplished by the completion of a course. These outcomes are evaluated as part of our ABET accreditation process.

1. Understand common security terminology, threats, vulnerabilities, and security design principles

2. Understand basic cryptography concepts, and specific commonly used algorithms and protocols.

3. Understand common program vulnerabilities, and secure programming techniques.

4. Understand formal security models, including Bell-LaPadula (MLS), Biba, and Chinese Wall security.

5. Understand basic network security issues and controls.

6. Understand administrative issues in security, such as planning, security policies, and risk analysis.

7. Understand privacy concepts and data anonymization

8. Obtain hands-on experience in using common security tools, such as firewalls, intrusion detection systems, and port scanning software.

GRADING

Attendance/Class Participation: 5%

Homework: 15%

Quiz: 10%

Laboratory Exercises: 25%

Project: 15%

Midterm Exam 15.0%

Final Exam: 15.0%

Notes:

ATTENDANCE POLICY

Class attendance is regarded as an obligation as well as a privilege. All students are therefore expected to attend each class meeting. *A student who misses class is still responsible to find out what was discussed and to learn the material that was covered and obtain the homework that was assigned on the missed day.* The instructor is not responsible for re-teaching material missed by a student who did not attend class. Therefore, each student is accountable for and will be evaluated on *all* material covered in this course, regardless of attendance.

Attendance/Participation grades will be based on attendance, contribution to in-class discussions, and assessment of any in-class work. Disruptive behavior and unexcused absences deemed excessive will result in a lower attendance/participation grade.

HOMEWORK

Homework will be assigned based on material from the lectures and textbook. These assignments are meant for you to become familiar with the course material and this practice will aid you in mastering the concepts on the labs and exams. 25% points will be deducted if you turn in your assignments a day late. You will get only half of the points if you submit your assignment a week late. Assignment turned in after a week without instructor's approval will receive zero points.

LABORATORY EXERCISES

Students will complete several (approximately five or six) in-depth hands-on laboratory exercises during the semester intended to give a more thorough view of computer security. These labs may be completed in the Security Lab (F206) during one of the scheduled lab sessions, in the downstairs Student Computer Lab (B129), or on your own laptop/desktop using a Virtual Machine (VM). It is critical that you understand that any OS you install for these labs will be installed on the VM and not your physical machine. Trying to install an OS on your physical machine may result in loss of your data. The lab assignment will be due at 11.59 PM on the day of lab completion. Late lab assignments will incur a 30% reduction penalty for each 24 hours submitted beyond the deadline up to 2 days. Lab assignments submitted more than 2 days late will not be accepted and receive a grade of 0.

QUIZZES

Quizzes will be posted on Blackboard throughout the semester. The objective of the quizzes to test students on theoretical concepts discussed in the class as well as minor problem solving.

PROJECT

A major project will be due in this course at the end of the semester. Students are encouraged to propose any topics relevant to computer security, program security, OS security, etc. The projects can be hardware implementations, programming, or simulations. You can also choose an academic publication in a relevant area in security and replicate the results.

The project proposal is due 09/12 11.59 PM. The project submission and final report is due 11/30 11.59 PM. Templates for both the proposal and report will be provided in advance.

Late projects will incur a 30% reduction penalty for each 24 hours submitted beyond the deadline up to 2 days. Projects submitted more than 2 days late will not be accepted and receive a grade of 0.

MID-TERM EXAM

There will be a midterm examination given in this course. The confirmed date and pattern of this exam will be posted on Blackboard and announced in class at least one week prior to the date of the exams.

FINAL EXAM

There will be a comprehensive final exam on Wednesday, December 13, 2017, from 5:30 PM to 8:30 PM. All students are expected to take the final exam during the scheduled time period.

GRADING POLICY

Grades will be posted on Blackboard throughout the semester to provide an ongoing assessment of student progress, though final assessment will be measured using the weighted average above.

You'll have to wait 24 hours after a grade has been assigned to dispute the grade.

Also, once a grade is assigned on Blackboard, students have two weeks to dispute the grade. The proper channel for grade disputes is to first go to the original grader (such as the TA or IA) in an attempt to resolve the issue. If, however, a resolution cannot be reached between the student and the grader, the student shall then go to the instructor who will have the final say on the grade.

STUDENT RESPONSIBILITY

Students are responsible for submitting the *correct* assignments (i.e., uploading the proper files) for each applicable assignment submission on Blackboard. When an incorrect assignment is submitted to Blackboard, students wanting to resubmit with the correct file(s) *after the due date has passed* will have their assignment assessed a 30% reduction penalty. Proof must be given (i.e., timestamp for the file on the CSE machines) that the assignment was completed on time. If you have any questions or concerns about your submission, please work with your instructor or TA/IA for this course to ensure the correct file(s) is/are submitted.

ADA STATEMENT

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For

additional information, see the Office of Disability Accommodation website at http://disability.unt.edu. You may also contact them by phone at (940) 565-4323.

ACCEPTABLE STUDENT BEHAVIOR

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at http://deanofstudents.unt.edu.

ACADEMIC DISHONESTY

This course follows the Department of Computer Science and Engineering *Cheating Policy*. Specifically, students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam for the first offense. Additionally, the incident may be reported to the Dean of Students, who may impose a further penalty. A second instance of cheating in this class will result in a grade of F in the class, and referral to the Department Chairperson and Dean of Engineering, whereby a dismissal hearing may be initiated by the Dean of Engineering.

Individual assignments, including laboratory exercises and programming assignments, in this course must be the sole work of the individual student. You should not work with other students on shared program solutions or use solutions found on the Internet. Specifically, you should never copy someone else's solution or code, and never let a classmate examine your code. If you are having trouble with an assignment, please consult with your instructor or TA/IA assigned to this course. Failure to adhere to these strict standards may be cause for disciplinary action even leading to expulsion from the University.

Students are responsible for being familiar with the university standard for academic integrity. In the case that the above description or any in-class discussion of appropriate and inappropriate collaboration do not answer all of your questions, please meet with your instructor and look at the university Student Rights and Responsibilities web page.

SYLLABUS REVISIONS

This syllabus may be modified as the course progresses should the instructor deem it necessary. Notice of changes to the syllabus shall be made through Blackboard and/or class announcement.