CSCE 3550.001/Foundations of Cybersecurity

Instructor Information

Name: Dr. Mark A. Thompson, Sr.
Pronouns: he/him/his
Class Location/Time: NTDP K120 (Discovery Park), TuTh 4:00 PM – 5:20 PM
Office Location: Discovery Park, NTDP F264
Phone Number: (940) 369-7055
In-Person Office Hours: Room F264, MoWe 10:00 AM – 11:00 AM, TuTh 3:00 PM – 4:00 PM
Virtual Office Hours: https://unt.zoom.us/j/4905226860, by appointment
Email: Mark.Thompson2@unt.edu

Teaching Assistants:
For assistance with assignments/labs or questions about grading of a particular assignment, you may also contact the TAs assigned to this course either during their office hours or via e-mail. A detailed schedule with available office hours/lab times and locations will be posted on Canvas.

- Jackson Paul jacksonpaul@my.unt.edu
- Sri Lakshmi Tammineni srilakshmitammineni@my.unt.edu
- Sharanya Battar sharanyabattar@my.unt.edu

Grades will be posted on Canvas throughout the semester to provide an ongoing assessment of student progress, but typically about one week after the assignment was due. Grading disputes should first go to the TA that graded your assignment, but if a resolution cannot be reached between the student and the grader, then you should go to the instructor who will have the final say on the grade.

Course Description
This course covers cybersecurity terminology, principles, and technologies and introduces students to security issues related to hardware, software, cryptography, and policy to make better, safer decisions. Topics include cyber threats and vulnerabilities, information security frameworks and policies, cryptography, penetration testing, and defense in depth. Many of the techniques will be demonstrated and practiced using a modern programming language. The goal is to develop a foundation for further study in cybersecurity.

Course Structure
This is an in-person, face-to-face course, where instruction is delivered fully on site, meeting in NTDP K120 on Tuesdays and Thursdays from 4:00 PM – 5:20 PM. We will use homework assignments, projects, and labs to reinforce and put the main ideas discussed in lectures into practice.

Tentative Class Schedule (subject to change):

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Material Covered</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/29</td>
<td>— 9/2</td>
<td>Overview of Computer Security Ch. 1</td>
</tr>
<tr>
<td>2</td>
<td>9/5</td>
<td>— 9/9</td>
<td>Program Security</td>
</tr>
<tr>
<td>3</td>
<td>9/12</td>
<td>— 9/16</td>
<td>Program Security</td>
</tr>
<tr>
<td>4</td>
<td>9/19</td>
<td>— 9/23</td>
<td>Security Policies &amp; Models Bishop Chs. 4 - 7</td>
</tr>
</tbody>
</table>
Course Objectives
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. Describe basic security terminology and concepts as well as analyze security threats, vulnerabilities, and attacks.
2. Describe the role of computers and networks in a security context.
3. Develop basic organizational security policies.
4. Demonstrate basic principles and concepts of cryptography and general cryptanalysis.
5. Demonstrate various types of penetration testing to measure the security posture.
6. Discuss the legal and ethical issues involved with securing computer systems, networks, and information.
7. Apply security design principles using a modern programming language to solve various cybersecurity problems.

Required/Recommended Materials

Required Textbook:


Optional Reference Textbook:

How to Succeed in this Course

Communications Expectations

This course will use the Canvas learning management system (LMS) to distribute course materials, communicate and collaborate online, post grades, and submit assignments. You are responsible for checking the Canvas course site regularly for class work and announcements. You may find the Online Communication Tips (https://clear.unt.edu/online-communication-tips) helpful. Should you have any questions about the course or material in general, you may attend my office hours or use your UNT e-mail address to e-mail me directly with the text CSCE 3550.001 (or your specific recitation section) in the subject line. Every attempt will be made to answer e-mails within 24 hours, but if no reply is received within this time frame, please follow up with me again to ensure a response.

Acceptable Student Behavior

As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation so we will work as a class to collaborate in ways that encourage inclusivity.

Assessing Your Work

Your course grade will be a weighted average according to the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>20.0%</td>
</tr>
<tr>
<td>Lab Assignments</td>
<td>20.0%</td>
</tr>
<tr>
<td>Projects</td>
<td>15.0%</td>
</tr>
<tr>
<td>Exams 1 – 2 (15% each)</td>
<td>30.0%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>15.0%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Grades will be posted on Canvas throughout the semester to provide an ongoing assessment of student progress, though final assessment will be measured using the weighted average above. Once a grade is posted on Canvas, students have one (1) week to dispute the grade, unless otherwise instructed. The proper channel for grade disputes is to first go to the original grader (i.e., the TA) 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.

Students are responsible for submitting the correct assignments (i.e., uploading the proper files) for each applicable assignment submission on Canvas. In certain cases, when an assignment is submitted on time, but to an incorrect assignment location (e.g., submitting Lab 4 to Lab 5 drop box on Canvas), the assignment may be assessed a 30% reduction penalty if the due date has passed. If you have any questions or concerns about your submission, please work with your instructor or TA to ensure the correct file(s) is/are submitted.

Late Work

Homework, projects (i.e., programming assignments), and laboratory assignments will be accepted up to 24 hours late and be assessed a 30% grade reduction penalty. Homework, projects, or lab assignments submitted more than 24 hours late will not be accepted and receive a grade of 0.
Course Requirements/Schedule

**Homework:** Homework will be assigned based on material from the lectures and textbook and may include some programming. 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. These assignments are meant to be individual assignments, so you should work on these without the assistance of others or solutions available on the Internet.

**Lab Assignments:** Students will complete several in-depth hands-on laboratory projects during the semester intended to give a more thorough view of computer security. These labs may be completed on during scheduled recitations (F236) with available TA assistance or on your own computer using a Virtual Machine (VM). VirtualBox ([https://www.virtualbox.org/](https://www.virtualbox.org/)) will be used for the laboratory exercises. Virtual Machine (VM) images will be made available for these activities.

**Projects:** There will be several security-based programming projects assigned in this course. These assignments will be completed outside of class, though some in-class time may be dedicated to answering questions about or working on these projects.

**Midterm Exams:** There will be two in-person midterm examinations given in this course. The dates of these exams will be posted on Canvas and announced in class at least one week prior to the date of the exams. A make-up exam will be given at the discretion of the instructor when a student misses an exam with an excused absence. Unexcused absences on the date of an exam may result in a grade of 0 for the missed exam, so every effort should be made to attend class on the day of a scheduled exam.

**Final Exam:** The in-person final exam will be closed-book/closed notes and will cover both the theoretical and laboratory material in the course. The final exam will be given on Thursday, December 15, 2022, from 1:30 PM to 3:30 PM. All students are expected to take the final exam during the scheduled time period.

Course Policies

**Assignment Policy**
All assignments will be posted to Canvas with given due dates. Submissions will be done using Canvas to the appropriate assignment drop box by the due date and time. A sophisticated program will be used to compare your assignment submission to the work of all other students (including students in past classes), so be sure to turn in your own work.

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: [helpdesk@unt.edu](mailto:helpdesk@unt.edu) or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

**Instructor Responsibilities and Feedback**
Your instructor is committed to providing a quality course that includes clear instructions for projects and assignments as well as an appropriate amount of time to complete the assignments. Questions about an assignment may be addressed to the instructor or the TAs supporting this course. Study guides for exams will be made available to students prior to the exam.
Every attempt will be made to answer e-mails within 24 hours. If you do not receive a response by that time, please re-send the e-mail and verify you have sent it to my correct e-mail address at Mark.Thompson2@unt.edu. It is my hope that grades will be returned to students approximately one week after the due date, but please keep in mind that this course has a large number of students with limited grading resources who are students as well, so I ask your patience if we run behind in returning the graded assignments.

**Syllabus Change Policy**

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 Canvas and/or class announcement.

**UNT Policies**

**Academic Integrity Policy**

*Academic Integrity Standards and Consequences.*

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

This course follows UNT’s policy for Student Academic Integrity found at [https://policy.unt.edu/policy/06-003](https://policy.unt.edu/policy/06-003) as well as the Cheating Policy for the Department of Computer Science and Engineering (posted on Canvas). Specifically, the first instance of a student found to have violated the academic integrity (i.e., cheating) policy will result in a grade of "F" for the course and have a report filed into the Academic Integrity Database, which may include additional sanctions.

While some assignments, such as homework and lab assignments, may benefit from collaboration, your submissions must be your own. If a lab requires a screenshot, for example, you must submit your own screenshot and not that of another student. Additionally, using solutions found on the Internet or copy-pasting an answer to an assignment from a past student or online forum is considered to be plagiarism.

Programming assignments, however, must be the sole effort and work of the individual student. You should not work with other students on shared program solutions or use program solutions found on the Internet. Specifically, you should never copy someone else’s solution or code, and never let a classmate examine your code.

A sophisticated program will be used to compare your work to the work of all other students (including students in past classes). If you are having trouble with an assignment, please consult with your instructor or TA associated with the class.

All work must be solely your own on exams. There should be no ambiguity here.

In case the above description and in-class discussion of appropriate and inappropriate collaboration do not answer all of your questions, please email me or come discuss this with me during my office hours.

**ADA Policy**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to
implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the Office of Disability Access website (http://www.unt.edu/oda). You may also contact ODA by phone at (940) 565-4323.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Attendance and Participation

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. If there are extenuating circumstances preventing you from attending the class, please notify your instructor so that you can work together to ensure your success in learning the material.

Recitation Sections: Although attendance at your scheduled recitation is considered to be optional, the recitation classrooms have been especially configured to support working on the laboratory exercises. Students may want to take advantage of attending their recitation section to receive guidance on completing the homework, laboratory exercises, projects, or other course assistance, such as preparing for exams. This class has the following scheduled recitation section:

- CSCE 3550-201 Tu 5:30 PM – 6:20 PM NTDP F236
- CSCE 3550-202 Th 5:30 PM – 6:20 PM NTDP F236
- CSCE 3550-203 We 12:30 PM – 1:20 PM NTDP F236
- CSCE 3550-204 Tu 3:00 PM – 3:50 PM NTDP F236
- CSCE 3550-206 Th 3:00 PM – 3:50 PM NTDP F236

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community. If you are experiencing any symptoms of COVID (https://www.cdc.gov/coronavirus/2019-ncov/symptoms testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.