

Concepts & Practices in Information Security

INF 385T (28425)

Spring 2023

Fri: 12-3pm; UTA 1.204

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Office Hours: By Appointment

Course Overview

This course will provide an introduction into the discipline and industry of information security (also known as cyber security). We will explore the history, theory, and practices of how we protect and control information in a connected, digital world. Information security is a complex topic that has become highly technical and specialized, and this course is designed to serve students regardless of their technical background or proficiency.

Security has become one of the most important issues facing our increasingly technological world. Security not only involves computer-savvy hackers breaking into supposedly protected systems, but also touches on everything from privacy and identity to the general administration of a bureaucratically administered society. As such the field is rich and varied, offering something to everyone and anyone interested in understanding more about it.

The course will be divided into several modules, each covering a common conceptual triad widely used within the InfoSec discipline. Each triad-based module will explore the core concepts of that triad, for example the CIA triad of “confidentiality, integrity, and availability” that kicks off the course. We will interrogate each concept through the lenses of both theory and practice and discuss them in the context of current trends and events. After grounding ourselves in these concepts, the class will then apply that knowledge through independent research projects and in-class exercises.

Student research projects are critical as they allow students to both put the concepts they have studied to use, and to provide the flexibility for each student to explore particular areas of specialization they may find most interesting.

Class Recording Privacy

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

Sharing of Course Materials is Prohibited

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with

anyone outside of the class without explicit, written permission of the instructor. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. The University is well aware of the sites used for sharing materials, and any materials found on such sites that are associated with a specific student, or any suspected unauthorized sharing of materials, will be reported to [Student Conduct and Academic Integrity](#) in the [Office of the Dean of Students](#). These reports can result in sanctions, including failure of the course.

Covid Resources

Although the pandemic is considered behind us, new variants and seasonal waves continue to occur. The safety and health of everyone in the class is my primary consideration. As a result, while this class is officially in person, I reserve the right to be flexible about which or how many of our class sessions meet in person. ***In any event, no student will be required to attend any in-person session if they feel doing so puts themselves or others at risk.***

We will work together to decide which, if any class sessions are conducted virtually. When we do meet together, we will adhere to current and appropriate guidelines and requirements as mandated by the University, the State of Texas, and common sense. These requirements may change over the course of the semester as circumstances evolve.

All students must use a UT Zoom account in order to participate in classes, office hours, and any UT affiliated events.

To help keep everyone at UT and in our community safe, it is critical that students report Covid-19 symptoms and testing, regardless of test results, to [University Health Services](#), and faculty and staff report to the [HealthPoint Occupational Health Program](#) (OHP) as soon as possible. Please see this [link](#) to understand what needs to be reported. In addition, to help understand what to do if a fellow student in the class (or the instructor or TA) tests positive for COVID, see this [University Health Services link](#).

Classroom safety and Covid-19

To help preserve our in-person learning environment, the university recommends the following.

- Adhere to university [mask guidance](#). Masks are strongly recommended inside university buildings for vaccinated and unvaccinated individuals, except when alone in a private office or single-occupant cubicle.
- [Vaccinations are widely available](#), free and not billed to health insurance. The vaccine will help protect against the transmission of the virus to others and reduce serious symptoms in those who are vaccinated.
- [Proactive Community Testing](#) remains an important part of the university's efforts to protect our community. Tests are fast and free.
- The university has determined that all students coming to campus for the fall semester must receive a viral COVID-19 test in their local community within 72 hours prior to arrival in Austin for move in. If they already reside in Austin, they must test within 72 hours of moving into the residence where they will reside for

the academic semester. Finally, individuals who are already living in the residence in Austin where they will reside this academic semester should test within 72 hours (3 days) prior to the start of class on Aug. 25.

- We encourage the use of the [Protect Texas App](#) each day prior to coming to campus.
- If you develop COVID-19 symptoms or feel sick, stay home and contact the [University Health Services](#)' Nurse Advice Line at 512-475-6877. If you need to be absent from class, contact [Student Emergency Services](#) and they will notify your professors. In addition, to help understand what to do if you have been had close contact with someone who tested positive for COVID-19, see this [University Health Services link](#).
- [Behavior Concerns and COVID-19 Advice Line](#) (BCCAL) remains available as the primary tool to address questions or concerns from the university community about COVID-19.
- Students who test positive should contact [BCCAL](#) or self-report (if tested off campus) to [University Health Services](#).
- Visit [Protect Texas Together](#) for more information.

Assignments

Assignments vary from semester to semester, depending on the size and interests of the students taking the class. I try to come up with assignments that stimulate the specific curiosities of all the students taking the course over the semester. To this end, we may work together to come up with the best mix of assignments, which range from group projects to more traditional research papers. This flexibility is even more important during the current pandemic, which has disrupted our ability to meet and interact with one another in person.

In general, assignments will take several forms:

Assigned Readings – we will read several required texts, including books and articles that are assigned during the semester (some by the students themselves.) I expect everyone to have completely read each all assignments prior to class and come ready to discuss.

Class Discussions – I expect everyone to participate in class. Actively. The pandemic has thrown up additional challenges in that regard, whether it be “Zoom fatigue” during remote classes or “mask fatigue” as we try to have lively discussions through layers of cloth. I expect everyone to do their best to help us stay both engaged and efficient in our discussions, which starts with coming to class prepared.

Tracking and Analyzing Current Events – cyber security is a fluid and dynamic field, and is often at the center of media reports and public policy, especially when there is a data breach or new data protection laws being considered. Monitoring these events and developments can be an excellent way to complement our readings and discussions, and to bring important insights back into class to share with your colleagues.

Papers, Projects, and Exercises – in order to apply the readings and discussions, I'll be asking you to undertake papers and projects over the course of the semester. There will be some choice and flexibility involved here. We'll talk more about these assignments in class.

Live Action Simulations – where class size allows it, we will undertake a simulation of a real-world event where the class must come together in different roles, assess the available information and intelligence available on the issue, and model activities or make recommendations regarding appropriate action.

Guest Lectures and Presentations – I will endeavor to bring in guests from the world of information security and privacy to share their knowledge and experiences with the class. I expect students to come to class ready to engage with our guests and make them feel welcomed.

Class Materials and Grading

This class will involve quite a bit of reading, so please plan accordingly as I expect everyone to have completed the assigned materials prior to the start of class.

Required Text

Over thirty years of practicing and teaching information security has demonstrated to me that there is no single textbook capable of meeting the needs of a course like this, with students of diverse backgrounds, proficiencies, and interests. Readings will be drawn from industry and academia as appropriate to meet the needs and interests of the class. Given the dynamic nature of cyber security (new security breaches, for example), readings may be updated throughout the semester.

I will assign weekly readings through Canvas. As students begin their own research, a number of optional texts may also prove useful. I will post and provide appropriate lists of current and applicable texts throughout the semester.

Optional Texts

You will have the opportunity (which is a nice way of saying you'll be required) to read and analyze one or more additional texts over the course of the semester. Information security and privacy are broad disciplines and there are too many great books and papers to read in a single semester, but I am here to help you identify those that may meet your specific interests and objectives for the class.

The *Cybersecurity Canon* is a project by Ohio State University to choose the best information security related books published each year. Check it out at <https://icdt.osu.edu/cybercanon> - you can filter by different topics or interests.

Attendance and Grading

Given that the class only meets once a week, and that those sessions may be remote, it is critical that you attend each scheduled class session. If you have to miss a class, you must let me know at least one week ahead of time and arrange with one of your colleagues to

take notes for you or cover any assignments due. *If you miss a class session without giving me the above notice, I reserve the right to deduct 5 percentage points from your final grade for each class missed.*

Class Participation

Keeping up with the readings, resulting in regular and engaged participation in class discussions, is required and counts for 25% of your final semester grade.

Grading

Grade ratios for assignments will be announced as those assignments are finalized and based upon class size, and student interest.

Per University policy, the grading scale for this class is A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F.

Office Hours: By Appointment – please email me to set up a time. I will try to hold virtual office hours on Friday’s during our regularly scheduled class session, since we won’t be Zooming for three hours straight.

Policy on Scholastic Dishonesty

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. For further information, please view the University catalog:

<http://catalog.utexas.edu/general-information/the-university/#universitycodeofconduct>

Additional Information

The following information is provided by the University to guide and inform students.

Accessibility and Inclusion

The university is committed to creating an accessible and inclusive learning environment consistent with university policy and federal and state law. Please let me know if you experience any barriers to learning so I can work with you to ensure you have equal opportunity to participate fully in this course. If you are a student with a disability, or think you may have a disability, and need accommodations please contact Services for Students with Disabilities (SSD). Please refer to SSD’s website for contact and more information: <http://diversity.utexas.edu/disability/>. If you are already registered with SSD, please deliver your Accommodation Letter to me as early as possible in the semester so we can discuss your approved accommodations and needs in this course.

Land Acknowledgment

(I) We would like to acknowledge that we are meeting on Indigenous land. Moreover, (I) We would like to acknowledge and pay our respects to the Carrizo & Comecrudo, Coahuiltecan, Caddo, Tonkawa, Comanche, Lipan Apache, Alabama-Coushatta, Kickapoo, Tigua Pueblo, and all the American Indian and Indigenous Peoples and

communities who have been or have become a part of these lands and territories in Texas, here on Turtle Island.

Title IX Reporting

Title IX is a federal law that protects against sex and gender-based discrimination, sexual harassment, sexual assault, sexual misconduct, dating/domestic violence and stalking at federally funded educational institutions. UT Austin is committed to fostering a learning and working environment free from discrimination in all its forms. When sexual misconduct occurs in our community, the university can:

1. Intervene to prevent harmful behavior from continuing or escalating.
2. Provide support and remedies to students and employees who have experienced harm or have become involved in a Title IX investigation.
3. Investigate and discipline violations of the university's [relevant policies](#).

Faculty members and certain staff members are considered “Responsible Employees” or “Mandatory Reporters,” which means that they are required to report violations of Title IX to the Title IX Coordinator. **I am a Responsible Employee and must report any Title IX-related incidents** that are disclosed in writing, discussion, or one-on-one. Before talking with me or with any faculty or staff member about a Title IX-related incident, be sure to ask whether they are a responsible employee. If you want to speak with someone for support or remedies without making an official report to the university, email advocate@austin.utexas.edu For more information about reporting options and resources, visit the [Title IX Office](#) or email titleix@austin.utexas.edu.

Campus Safety

The following are recommendations regarding emergency evacuation from the [Office of Campus Safety and Security](#), 512-471-5767,

- Occupants of buildings on The University of Texas at Austin campus must evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
- Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.
- In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
- For more information, please visit [emergency preparedness](#).

Calendar:

<u>Week</u>	<u>Topic(s)</u>	<u>Reading & Assignments</u>
Jan 13	Introductions	Syllabus
Jan 20	Information and InfoSec	<i>Canvas Readings</i>
Jan 27	Module 1 - CIA Concepts	<i>Canvas Readings</i>
Feb 3	Module 1 - CIA Applications	<i>Canvas Readings</i>
Feb 10	Module 1 - GRC Concepts	<i>Canvas Readings</i> Due: CIA Case Study
Feb 17	Module 2 - GRC Applications	<i>Canvas Readings</i>
Feb 24	Module 2 - PPT Concepts	<i>Canvas Readings</i> Due: GRC Case Study
Mar 3	Module 2 - PPT Applications	<i>Canvas Readings</i>
Mar 10	Comprehensive InfoSec Combining the Concepts	Due: PPT Case Study
Mar 17	Spring Break	
Mar 24	Final Project Kickoff	Due: Draft final project topics
Mar 31	Project Check-in	Due: Draft final project outline
Apr 7	Project Check-in	Due: Draft final project sources
Apr 14	Final Project Presentations	Due: Final project summaries
Apr 21	Last Class – Movie Day!	Close out presentations, if needed Final Project Due by Noon on Apr 24th