

ISP 380 (28650): Information Security and Privacy

Instructor: Suzanne Barber
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Office Hours: MW 5pm to 6pm and by appointment.

- Zoom invitation to be posted on course Canvas page (Office hours will not be recorded.)

Class Hours:

We will meet <u>8am to noon</u> on the following dates:
August 27-28
September 17-18
October 15-16
November 12-13
December 3-4

I. **Three Principles will guide my instruction and our class community:** Excellence, Kindness, Fairness

II. **Pre-Requisites:** A grade of C- or better in EE312

III. **Reading List**

Required Text:

- Security in Computing by Charles Pfleeger, Shari Pfleeger, Jonathan Margulies. 5th Edition. Upper Saddle River, NJ: Prentice Hall, 2015. Print ISBN:978-0-13-408504-3 (SC)

Reference Texts:

- Geekonomics: The Real Cost of Insecure Software by David Rice
- Computer Security: Art and Science by Matt Bishop
- Identity Management: Concepts, Technologies, and Systems (Information Security & Privacy) by Elisa Bertino and Kenji Takahashi
- Collection of selected papers from academic publications, corporate and government reports, and popular press (provided by instructor)

IV. **Course Aims and Objectives**

The course offers an introduction to information security and privacy. Foundational concepts are presented to differentiate security and privacy and explore information value, information liabilities and solutions to secure information and protect privacy. Students will learn about business practices, regulations, public policy, and technologies for both Information security and information privacy. Across a range of market sectors and application domains (e.g. healthcare, telecom, retail, IoT, financial services), the course will examine different types of threats and attacks, methods to detect data incidents and breaches, and respond to and recover from data incidents and breaches while managing risks and maintaining business continuity. Students will also learn to design systems addressing information security and privacy requirements in different operational domain contexts bringing together a combination of technical, social, business, and legal solutions.

Ultimately, students will exit the course understanding how to translate security and privacy into a technology and a business driver that is critical to meet an organization's mission.

IV. Grading Procedures: Grades will be based on:

Research and Comprehension Report #1	10%
Research and Comprehension Report #2	10%
Research and Comprehension Report #3	10%
Research and Comprehension Report #4	10%
Information System Security and Privacy Design Project	60%

The Information System Security and Privacy Design Project covering the following topics:

- Data Inventory
- Information Valuation and Categorization
- Matrix of Vulnerabilities and Identification of Risks to Confidentiality, Integrity, and Availability
- Trusted Identity for Information Access and Sharing Controls
- Incident Response Plan
- Information Security and Privacy – System Design

The Information System Security and Privacy Design Project will be delivered in 4 milestones. This Information System Security and Privacy Design Project will replace the Final Exam. In other words, this class will NOT have a Final Exam.

Each Research and Comprehension Report will serve as an executive summary in response to class lectures and discussions. Students may be asked to share parts of their report during class on an impromptu basis.

V. Course Policies

Attendance: Attendance is directly related to success so I urge you to attend.

Late Deliverables: All deliverables are expected in advance or no later than the due dates. However, 25% deduction will be allowed for excused unusual and approved circumstances when a Research and Comprehension Report or Project milestone deliverable is submitted late but within 48hrs of due date. Otherwise, no credit will be given.

Changes to the Course Schedule may be made at my discretion and if circumstances require. It is your responsibility to note these changes when announced (although I will do my best to ensure that you receive the changes with as much advanced notice as possible). Please check Canvas on a regular basis since all important class events and changes will be announced in class and posted to Canvas.

VI. Course Website:

We will use Canvas System available at <https://canvas.utexas.edu/>.

VII. Course Schedule

Class Weekend	Course Lecture Topic	Textbook Reading	Assignments/Exams
August		Ch. 1, 3	
	Introduction to Dr. B Course Overview Project Overview		
	Lecture 1. Information Inventory & Classification		
	Lecture 2. Information as an Asset (and a Liability)		
	Lecture 3. Three Tenets of Information Security - Confidentiality, Integrity, and Availability		
	Lecture 4. Difference between security and privacy		
	Lecture 5. Vulnerabilities, Threats and Attacks		
September		Ch. 2.1, 2.2, 13.1	<i>DUE: Assignment #1 – Data Inventory, Valuation and Categorization</i>
	Lecture 6. Security and Privacy Risk Assessment		
	Lecture 7.1. Trusted Identity? – Identity Construction		
	Lecture 7.2. Trusted Identity? – Lifecycle of an Identity		
	Lecture 7.3. Trusted Identity? – Access Control Models		
	Lecture 8.1. Trust Frameworks: Levels of Assurance		
	Lecture 8.2. Trust Frameworks: Stakeholders and Trust Framework Models		
October		Ch. 10 Ch. 2.1, 2.3	<i>DUE: Assignment #2 - Vulnerabilities and Risks to CIA</i>
	Lecture 9.1. Data Breaches: Detecting and Classifying Events		
	Lecture 9.2. Data Breaches: Incident Response Planning		
	Lecture 10. Information System Security and Privacy: Design Principles		
	Lecture 11. Information System Security and Privacy: Storing Information Assets (aka Cloud Migration – Yes? No? Hybrid?)		
	Lecture 12.1. Cryptology		
	Lecture 12.2. Cryptology		
November		Ch. 2.1, 2.3 Ch. 4, 5, 6 Ch. 8 (Ref. Ch. 3, 7) Ch. 9, 11	<i>DUE: Assignment #3 - Information Access and Sharing Controls + Incident Response Plan</i>
	Lecture 12.3. Cryptology		
	Lecture 13.1. Network Security and Web Security		
	Lecture 13.2. Network Security and Web Security		
	Lecture 14. Cloud Security		
	Lecture 15.1. Laws, Regulations and Policies		
	Lecture 15.2. Laws, Regulations and Policies		
December			<i>DUE: Assignment #4- Information Security and Privacy System Designs</i>
	Information Security and Privacy Innovations and Research		

VIII. Other University Notices and Policies

University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, equity, inclusion, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

COVID 19 Resources

The University offers resources at <https://coronavirus.utexas.edu/>

The Sanger Learning Center

All students are welcome to take advantage of Sanger Center's classes and workshops, private learning specialist appointments, peer academic coaching, and tutoring for more than 70 courses in 15 different subject areas. For more information, please visit <https://www.utexas.edu/ugs/slc> or call 512-471-3614 (JES A332).

Undergraduate Writing Center: <https://uwc.utexas.edu/>

Libraries: <https://www.lib.utexas.edu/>

ITS: <https://its.utexas.edu/>

Student Emergency Services: <https://deanofstudents.utexas.edu/emergency/>

Services for Students with Disabilities

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: <https://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.

Counseling and Mental Health Center

The [Counseling and Mental Health Center](https://cmhc.utexas.edu/) (<https://cmhc.utexas.edu/>) serves UT's diverse campus community by providing high quality, innovative and culturally informed mental health programs and services that enhance and support students' well-being, academic and life goals. To learn more about your counseling and mental health options, call CMHC at (512) 471-3515. If you are experiencing a mental health crisis, call the CMHC Crisis Line 24/7 at (512) 471-2255.

Behavior Concerns Advice Line (BCAL)

If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit <https://safety.utexas.edu/behavior-concerns-advice-line>.

BeVocal

BeVocal is a university-wide initiative to promote the idea that individual Longhorns have the power to prevent high-risk behavior and harm. At UT Austin all Longhorns have the power to intervene and reduce harm. To learn more about BeVocal and how you can help to build a culture of care on campus, go to: <https://wellnessnetwork.utexas.edu/BeVocal/>.

Use of E-mail for Official Correspondence to Students

All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at <https://it.utexas.edu/policies/university-electronic-mail-student-notification-policy>.

Pending Absence:

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

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.

Beginning January 1, 2020, Texas Senate Bill 212 requires all employees of Texas universities, including faculty, report any information to the Title IX Office regarding sexual harassment, sexual assault, dating violence and stalking that is disclosed to them. Texas law requires that all employees who witness or receive any information of this type (including, but not limited to, writing assignments, class discussions, or one-on-one conversations) must be reported. 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 would like to speak with someone who can provide support or remedies without making an official report to the university, please email advocate@austin.utexas.edu. For more information about reporting options and resources, visit <https://titleix.utexas.edu/>, contact the Title IX Office via email at titleix@austin.utexas.edu, or call 512-471-0419. Although graduate teaching and research assistants are not subject to Texas Senate Bill 212, they are still mandatory reporters under Federal Title IX laws and are required to report a wide range of behaviors we refer to as sexual misconduct, including the types of sexual misconduct covered under Texas Senate Bill 212. The Title IX office has developed supportive ways to respond to a survivor and compiled campus resources to support survivors.