Georgia Institute of Technology

Human Dimension of Cybersecurity Syllabus

Spring 2026

Delivery: 100% Web-Based, Asynchronous

Instructor Information

Ryan Shandler; Associate Professor in the School of Cybersecurity & Privacy (SCP);
rshandler@gatech.edu

Office Hours: Weekly office hours via Zoom. The dates and times will be posted via Canvas Announcements. Attendance is optional.

General Course Information

Description

This course examines the human dimension of cybersecurity as a critical component of modern computing systems. Moving beyond purely technical defenses, students will analyze how human behavior shapes vulnerabilities, threat models, and security outcomes in socio-technical environments. The course emphasizes adversarial thinking as a core competency, enabling students to evaluate systems from both attacker and defender perspectives. Through topics such as cognitive biases, trust, and decision-making under uncertainty, students will examine how human factors contribute to security failures, including phishing, social engineering, insider threats, and platform misuse.

Building on this foundation, the course situates individual behavior within broader cybersecurity ecosystems spanning organizations, online communities, and geopolitical contexts. Students will examine how diverse threat actors—ranging from cybercriminal networks and ransomware groups to state-sponsored operations—exploit human behavior to achieve their objectives. In parallel, the course analyzes how institutions design policies, governance structures, and technical controls to mitigate these risks, including their limitations. Case studies and scenario-based exercises expose students to real-world challenges such as cybercrime, digital harassment, and cyber-terrorism, emphasizing the interaction between human actors and technical systems.

Drawing on interdisciplinary research from political psychology, behavioral economics, and cyber policy, the course equips students with frameworks to analyze and address cybersecurity challenges through a human-centered lens. Students will engage with scholarly literature, synthesize empirical findings, and apply analytical tools to new problems. The course prepares those seeking to work at the intersection of technology, policy, and society, emphasizing the

critical thinking and research skills required for advanced study and professional practice in cybersecurity.

Pre- &/or Co-Requisites

- Familiarity with basic research methods and the ability to critically engage with academic readings and empirical studies.
- Comfort with interdisciplinary thinking, especially integrating insights across technology, policy, and human behavior.
- An introductory awareness of cybersecurity concepts, such as threats, attacks, or digital infrastructure (no technical expertise required).
- A basic understanding of social science concepts, ideally through prior study in political science, psychology, economics, or similar disciplines.

Course Learning Outcomes

By the end of the course, students will be able to:

1. Analyze how emotional and cognitive processes affect public perception, policy preferences, and behavioral responses to cybersecurity incidents.
2. Evaluate how psychological traits and biases shape susceptibility to misinformation, trust in institutions, and cybersecurity-related decision-making.
3. Categorize and assess the motivations, strategies, and capabilities of various cyber actors, including cybercriminals, terrorists, and vigilantes.
4. Apply interdisciplinary frameworks to understand how cyber harms are measured and how resilience is developed at individual, organizational, and societal levels.
5. Critically engage with debates around digital censorship, internet shutdowns, and the politics of information control in the digital age.
6. Develop policy-relevant insights into how psychological, social, and political dynamics intersect with technical cybersecurity challenges.

Course Materials

Course Text

There is no single textbook for this course. Each module will have one compulsory assigned reading that will be available on Canvas or through the Georgia Tech Library.

Additional Materials/Resources

N/A

Course Requirements, Assignments & Grading

Assignment Distribution and Grading Scale

Assignment Weight Distribution and Due Dates

Assignment	Weight (Percentage, points, etc.)
Quizzes (3)	**60% (3 x 20%)**
Video Literature Review	**20%**
Board Presentation	**20%**

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F 0-59%

Description of Graded Components

- **Quizzes**: Each quiz will assess your understanding of the key concepts and materials covered in lectures and readings. They help you demonstrate mastery of foundational knowledge and identify areas where you need additional review.
- **Video Literature Review**: This assessment requires you to engage deeply with scholarly sources and research on cybersecurity topics. This component demonstrates your ability to analyze, synthesize, and apply academic literature to understand the human dimensions of cybersecurity.
- **Board Presentation**: The goal of this assessment is to evaluate your level of understanding of cybersecurity as it applies to real world decision-making by commercial organizations. For this assignment, you will take the role of a Chief Information Security Officer (CISO) in a company. Appearing before the board of directors – students will answer questions about the firm's cybersecurity policies, defend its threat modelling policies, explain its response to a recent cyberattack, and make recommendations about future cybersecurity investments.

Submitting Assignments

All assignments (homework, knowledge checks, exams etc.) must be completed and submitted within the Canvas. Sending assignments (homework, knowledge checks, exams etc.), whether early, on time, or late to the professors is not permitted and will not be accepted. If there are technical issues, please notify the help desk, as well as the professor immediately.

Assignment Due Dates
All assignments will be due at the times listed above. These times are subject to change so please check back often. Please convert from Eastern Time to your local time zone using a Time Zone Converter.

Late and Make-up Work Policy
No late work will be accepted. Requests for exceptions must be communicated in advance whenever possible, and any consideration of flexibility will depend on the nature and documentation of the circumstances.

Grading and Feedback
Assignments will be graded and returned with feedback within one week of the submission deadline. Each quiz will assess material covered up to that point in the course and will not be cumulative, while the Board Presentation will draw upon content from the entire semester.

Technology Requirements and Skills

Computer Hardware and Software
- High-speed Internet connection
- Laptop or desktop computer with a **minimum** of a 2 GHz processor and 2 GB of RAM
- Windows for PC computers OR Mac iOS for Apple computers.
- Complete Microsoft Office Suite or comparable and ability to use Adobe PDF software (install, download, open and convert)
- Latest versions of Mozilla Firefox, Chrome and/or Safari browsers
- This course will use Honorlock to proctor all exams.

Technology Skills
In order to be successful on this course, you must be able to do the following:

- Navigating a computer operating system, launching, and quitting applications
- Connecting to the Internet
- Using a web browser to search the World Wide Web
- Downloading, saving, and uploading files, and sending and replying to email.
- Use Microsoft 365

Onboarding Quiz and Proctoring Information
All Georgia Tech online degree and certificate students are required to complete the Onboarding Quiz with Honorlock in the first week of the course. Honorlock is utilized for student identity verification and to ensure academic integrity. Honorlock provides student identity verification via facial and ID photos. You may also be asked to scan the room around you. The Onboarding Quiz is needed to help make sure that your identity is verified and that your system

is set up to work with Honorlock online proctoring tool. You are required to complete this quiz early in the semester to avoid problems when taking proctored exams.

Technology Help Guidelines

30-Minute Rule: When you encounter struggles with technology, give yourself 30 minutes to 'figure it out.' If you cannot, then post a message to the discussion board; your peers may have suggestions to assist you. You are also directed to contact the Helpdesk 24/7.

When posting or sending email requesting help with technology issues, whether to the Helpdesk, message board, or me use the following guidelines:

- Include a descriptive title for the subject field that includes 1) the name of course 2) the issue. Do NOT just simply type "Help" into the subject field or leave it blank.
- List the steps or describe the circumstance that preceded the technical issue or error. Include the exact wording of the error message.
- When possible, always include a screenshot(s) demonstrating the technical issue or error message.
- Also include what you have already tried to remedy the issue (rebooting, trying a different browser, etc.).

Course Policies, Expectations & Guidelines

Communication Policy

- Email course questions and personal concerns, including grading questions, to me privately using… Do NOT submit posts of a personal nature to the discussion board unless it is a private post on Ed Discussions.
- Email will be checked at least twice per day Monday through Friday; Saturday and Sunday, email is checked once per day. During the week, I will respond to all emails within 24 hours; on weekends and holidays, allow up to 48 hours. If there are special circumstances that will delay my response, I will make an announcement to the class.
- Student Forum/Q&A discussion boards will be checked twice per day Monday through Friday; Saturday and Sunday, these discussion boards will be checked once per day.
- Virtual office hours will be held using Zoom. I will hold Virtual Office Hours every [day, time], as well as special office hours for dedicated topics, such as a large, upcoming assignment. Special topic hours will be announced in advance. I am also happy to schedule one-on-one office hours in person, via...
- For questions related to technology, the Digital Learning Support team at https://b.gatech.edu/digitallearningsupport for assistance. You can also reach the Canvas Hotline by phone at 1(877) 259-8498 or by email at support@instructure.com.

Online Student Conduct and (N)etiquette

Although it is not expected to be a problem in a graduate-level class, students are asked to behave in the discussions and other class interactions professionally and civilly. If you are in

doubt, do not post it! Instructors reserve the right to remove any postings deemed inappropriate, unprofessional, or otherwise distracting from the course.

University Use of Electronic Email

A university-assigned student e-mail account is the official university means of communication with all students at Georgia Institute of Technology. Students are responsible for all information sent to them via their university-assigned e-mail account. If a student chooses to forward information to their university e-mail account, he or she is responsible for all information, including attachments, sent to any other e-mail account. To stay current with university information, students are expected to check their official university e-mail account and other electronic communications on a frequent and consistent basis. Recognizing that some communications may be time-critical, the university recommends that electronic communications be checked minimally twice a week.

Plagiarism & Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All students enrolled at Georgia Tech, and all its campuses, are to perform their academic work according to standards set by faculty members, departments, schools, and colleges of the university; and cheating and plagiarism constitute fraudulent misrepresentation for which no credit can be given and for which appropriate sanctions are warranted and will be applied. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations.

Collaboration & Group Work

Collaboration on graded assessments is not required in this course, and all submitted work must represent each student's individual effort unless otherwise specified. Students are encouraged to support one another's learning through discussion and engagement with classmates in order to foster a collaborative and professional learning community.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible to set up a time to discuss your learning needs.

Copyright

Among the materials that may be protected by copyright law are the lectures, notes, and other material presented in class or as part of the course. Always assume the materials presented by an instructor are protected by copyright unless the instructor has stated otherwise.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. See

https://catalog.gatech.edu/rules/21/ for an articulation of some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Course Schedule

All times are in Easter Time Zone.

Course Activities	Release Dates	Due Dates
Module 1: Adversarial Thinking and Threat Modeling		
Lecture Videos	January 11, 8:00 am ET	N/A
Module 2: Emotions and Cyber Threats		
Lecture Videos	January 18, 8:00 am ET	N/A
Module 3: Processing Information Under Conditions of Uncertainty		
Lecture Videos	January 25, 8:00 am ET	N/A
Module 4: Trust and Cybersecurity		
Lecture Videos	February 1, 8:00 am ET	N/A
Module 5: Digital Disinhibition and Deviance		
Lecture Videos	February 8, 8:00 am ET	N/A
Module 6: Profiles, Motivations, and Capabilities of Cyber Attackers		
Lecture Videos	February 15, 8:00 am ET	N/A
Quiz 1	February 18, 8:00 am ET	February 24, 2026, 11:59 pm ET
Module 7: Digital Vigilantism		
Lecture Videos	February 22, 8:00 am ET	N/A
Module 8: The Psychology, Politics and Organizational Structure of Ransomware Organizations		
Lecture Videos	March 1, 8:00 am ET	N/A
Spring Break: March 8 – 12 No Lectures / Modules		

Module 9: The Psychology of Cyberterrorism		
Lecture Videos	March 15, 8:00 am ET	N/A
Module 10: Cybersecurity Decision-Making in Business and Government		
Lecture Videos	March 22, 8:00 am ET	N/A
Quiz 2	March 25, 2026, 8:00 am ET	March 31, 2026, 11:59 pm ET
Module 11: Susceptibility to Disinformation		
Lecture Videos	March 29, 8:00 am ET	N/A
Access to Board Presentation's Dossier	April 1, 2026, 8:00 am ET	N/A
Module 12: Censorship and Control of Information		
Lecture Videos	April 5, 8:00 am ET	N/A
Module 13: Cybersecurity, Internet Access, and Human Rights		
Lecture Videos	April 12, 8:00 am ET	N/A
Module 14: Challenge Case: Vulnerable Populations in Cybersecurity		
Lecture Videos	April 19, 8:00 am ET	N/A
Quiz 3	April 21, 2026, 8:00 am ET	April 27, 2026,11:59 pm ET
Module 15: Resilience		
Lecture Videos	April 26, 8:00 am ET	N/A
Board Meeting Assessment	May 1, 2026, 8:00 am ET	May 6, 2026,11:59 pm ET