



MIS 4596 – Managing Enterprise Cybersecurity – Spring 2022
Section 002 – CRN 6642 – Tue/Thur 12:30 – 1:50 PM – Speakman Hall 114
Section 003 – CRN 22609 – Tue/Thur 2:00 – 3:20 PM – Speakman Hall 107

As of Dec. 5, 2021, subject to change

Instructor

- **Dr. Min-Seok Pang** (Ph.D., University of Michigan)
- Associate Professor of Management Information Systems
- Speakman Hall 201A
- minsang@temple.edu, 215-204-3059
- LinkedIn – <https://www.linkedin.com/in/minspang/> (Please connect!)
- Office Hours – Tue/Thur 3:30 - 4:30 PM and available anytime at Microsoft Teams

Information Technology Assistant

- Oviya Soundararajan
- oviya.sound@temple.edu

Course Textbook and Materials

- “Security Engineering: A Guide to Building Dependable Distributed Systems, 3rd Edition” by Ross Anderson
- Harvard Business Coursepack for MIS 4596 – three required cases to purchase at Harvard Business Publishing site (TBA)
- Security Assignments by Dave Eargle and Anthony Vance at <http://security-assignments.com/>
- Other materials will be available throughout the semester.
- (Optional) “Secrets and Lies: Digital Security in a Networked World,” by Bruce Schneier
 - Temple Library : <https://onlinelibrary-wiley-com.libproxy.temple.edu/doi/book/10.1002/9781119183631>
 - Amazon.com : <https://www.amazon.com/dp/0471453803/>

Class Sites

- **at MIS Community** - <https://community.mis.temple.edu/mis4596sec003spring2022/>
- **at Canvas** - <https://templeu.instructure.com/courses/104007>

TEMPLE AND COVID-19

Temple University’s motto is Perseverance Conquers, and we will meet the challenges of the COVID pandemic with flexibility and resilience. The university has made plans for multiple eventualities. Working together as a community to deliver a meaningful learning experience is a responsibility we all share: we’re in this together so we can be together.

Course Objective

This course is a broad introduction to the managerial issues of information security. Because security is multifaceted, the topics of the class range widely, including technical (e.g., cryptography), managerial (e.g., policy compliance), physical (e.g., door locks), and psychological (e.g., social engineering) issues. A key objective of the class is to develop a security mindset, in which one learns to think like an attacker for ways to exploit a system.

Course Learning Goals

Develop a security mindset

- Learn to think like a security professional—how to identify threats like an attacker, and how to model and mitigate those threats.

Gain a working knowledge of methods to protect data

- Gain a working knowledge of modern methods of protecting data: encryption, hashing, confidentiality, authentication, integrity, non-repudiation, certificates, and IP security.

Learn methods of attack and defense

- Learn methods of attacking systems and how to protect against those methods of attacks.

Appreciate the broad disciplines required for IS security

- Appreciate the broad disciplines required for information security to work. We'll cover subjects as comprehensive as cryptology, physical security, psychology, and management, based on based on the NIST Cybersecurity Framework Version 1.1 (<https://www.nist.gov/cyberframework/framework>) and the NIST Risk Management Framework (<https://csrc.nist.gov/projects/risk-management/about-rmf>).

Communicate security risks and responses effectively

- This course is a Temple-designated writing intensive course. As such, a substantial portion of the course will be devoted to practicing capable, proficient communication of cybersecurity risks, threats, mitigations, and responses to relevant stakeholders for their decision making.

Technology Requirements

Information Security Assignments

This course will use lab assignments and milestone projects at <http://security-assignments.com/>, developed by Dave Eargle and Anthony Vance. Access to the resources in this site will require subscription with a fee (<https://security-assignments.com/store/>). Details to be available.

Google Cloud Platform (GCP)

This course uses GCP to run tools and virtual machines necessary to complete assignments. New accounts on GCP receive a \$300 credit for three months. Students should be able to complete this class without going over that cost. The instructor will have the students launch a Kali virtual machine instance on GCP from which they can complete class assignments. The students will be able to remotely connect to the instance using Chrome Remote Desktop, which works just like a browser tab.

Microsoft Teams

Office hours will also take place at Microsoft Teams. It is free to install for all Temple University students. Students can use this for their group activities and collaboration.

- Join MIS 4546 team via https://teams.microsoft.com/l/team/19%3a_KTW9_SlgcF8ujv3Zj6fQgKuGQk3PivRyS9Hvzvidyk1%40thread.tacv2/conversations?groupId=4112f210-d70a-45cd-b3b9-f7a08e552322&tenantId=716e81ef-b522-4473-8e31-10bd02ccf6e5

Canvas

Canvas is the University's learning management system (LMS).

- For resources and/or Canvas related questions or issues, please use the Help (?) feature in the Canvas Global Navigation for assistance via phone or a 24-hour Chat feature.
- Canvas guides for students: <https://community.canvaslms.com/docs/DOC-10701>

Grading

Milestones	Group or Individual	40%
Labs	Individual	25%
Mid-Term Exam	Individual	15%
Final Exam	Individual	20%
Total		100%

Milestones (40%)

There are four milestone projects that will help students develop professional cybersecurity and communication skills.

- Milestone 1: Risk Assessment Draft
- Milestone 2: Final Risk Assessment Report
- Milestone 3: Penetration Test Report
- Milestone 4: Penetration Test with Mitigation Report
- These projects can be completed by individually or with a group of up to four. Students are free to form a group.
- A group can be made of students from both Section 002 and 003.
- The milestones will be graded in the same manner whether it is completed individually or by a group.
- Late submissions are subject to a 10% deduction in points per 12 hours.

Labs (25%)

These are hands-on learning activities that will begin in class and completed outside of class.

- There are 14 labs. However, only the top 12 highest lab scores will be counted toward the lab grade. (In other words, students can skip up to two labs.)
- All labs are due by 11:59 PM on Thursday, May 5. However, it is strongly encouraged to complete one lab a week throughout the semester. No late submission will be accepted.
- Some lab assignments are necessary to be completed prior to exams or milestones.

Lab Peer Support

Students are encouraged to help each other complete lab assignments. When a student offers help to another to complete one lab assignment, he/she will receive a 5% extra credit to the lab assignment.

- For example, if Molly helps Michael for Lab #2, she will receive a 5% extra credit to her Lab #2 grade. If Molly is reported to help two of her classmates, she will receive an 10% extra credit.
- The one who receives help must submit the helper's name in Canvas submission. (In other words, Michael should report that he has received help from Molly.)
- A student can report help only from one student in one lab. (Michael cannot report help from both Molly and Stuart.)

Mid-Term (15%) and Final Exams (20%)

- The mid-term and final exams will be open-book and open-note exams over Canvas.
- The mid-term exam opens at Feb 23 and is due by Feb 27, 11:59 PM (subject to change).
- The final exam opens at Apr 28 and is due by May 4, 11:59 PM (subject to change). It is cumulative and covers the entire semester.
- There will be no extension to completion of exams.

Certification Option for the Exams

- As an option, students seeking certification may replace both the mid-term and final exams by passing CompTIA Security+ certification (<https://www.comptia.org/certifications/security>) or other certification approved by the instructor.
- Students can substitute the score on the certification plus an adjustment (5% for the Security+) for the mid-term and final exams. For example, if a student receives an 85% on Security+, he/she receives 90% of the points for the two exams.
- To receive credit for the certification, the student must show evidence of having taken the certification exam by April 26.

Department Requirements for MIS Majors

- [Requirement 1] Those who are majoring or double-majoring MIS must earn at least 1,000 PRO points to pass this course by the end of the semester. (See <https://community.mis.temple.edu/files/2020/04/MIS-Course-Structure-Updated-March-2020.pdf>) This requirement does not apply to non-MIS majors.
- [Requirement 2] MIS majors who are graduating at the end of this semester are required to register as an MIS alumnus - <https://community.mis.temple.edu/professionalachievement/register-as-an-alum/>. This requirement does not apply to those who are not graduating.
- A failure to meet the above requirement results in an **Incomplete** grade. The department will inform the instructor in April-May 2022 of those failing to meet the above requirements, and the instructor will give them an Incomplete grade, which will be converted to a proper grade as soon as the two requirements are met.

Grade Scale

93% - 100%	A
90% - 92.99%	A-
87% - 89.99%	B+
83% - 86.99%	B
80% - 82.99%	B-
77% - 79.99%	C+
73% - 76.99%	C
70% - 72.99%	C-
67% - 69.99%	D+
63% - 66.99%	D
60% - 62.99%	D-
< 59.99%	F

Other Course Policies

- **Attendance and Participation** : Attendance and participation are a key component of learning experiences. It is strongly encouraged to read/review all post materials (readings, videos, or others) prior attendance and actively take part in all class discussions and activities. Missing classes will make it difficult to successfully complete the milestones, labs, and exams, leading to a lower final grade.
- **Email** : Use @temple.edu email account for all correspondents with the instructor. Email messages sent from a non-Temple account may not be responded. The instructor does not prefer using Canvas messaging.
- **Inclement Weather**: Generally, in case of inclement weather, a class will not be canceled as long as the University is open.

Schedule (subject to change)

Week	Tuesday	Thursday	Topics
1	Jan 11	Jan 13	Introduction Threat Modeling
2	Jan 18	Jan 20	Risk Assessment Information Privacy
3	Jan 25	Jan 27	Introduction to Linux and Google Cloud Platform Introduction to Cryptography
4	Feb 1	Feb 3	Symmetric Cryptography Hashing
5	Feb 8	Feb 10	Asymmetric Cryptography Digital Certificates and Public Key Infrastructures
6	Feb 15	Feb 17	Authentication and Passwords Password Cracking
7	Feb 22	Feb 24	Mid-Term Review Guest Speaker (TBA)
	Mar 1	Mar 3	Spring Break
8	Mar 8	Mar 10	Password Cracking Vulnerability Scanning

Week	Tuesday	Thursday	Topics
9	Mar 15	Mar 17	Vulnerability Exploitation
10	Mar 22	Mar 24	Vulnerability Exploitation Social Engineering
11	Mar 29	Mar 31	Physical Security
12	Apr 5	Apr 7	Malware Analysis Network Security Monitoring
13	Apr 12	Apr 14	Incident Response and Recovery
14	Apr 19	Apr 21	Incident Recovery Final Review

Other Key Dates and Deadlines (subject to change)

Tue, Jan 18	Milestone 1 opens
Mon, Jan 24	Last day to drop from the course
Sat, Jan 29	Deadline for Milestone 1
Sat, Feb 5	Deadline for Milestone 2
Wed, Feb 23	Mid-term exam opens
Sun, Feb 27	Deadline for mid-term exam
Tue, Mar 15	Milestone 3 opens
Sat, Apr 2	Deadline for Milestone 3
Mon, Apr 25	Last day to withdraw from the course
Thur, Apr 28	Final exam opens
Sat, Apr 30	Deadline for Milestone 4
Wed, May 4	Deadline for final exam
Thur, May 5	Deadline for completion of all lab assignments
Sat, May 7	Instructor deadline for the final grade to the University

All assignments and exams are due by 11:59 PM EST.

Attendance Protocol and Your Health

If you feel unwell, you should not come to campus, and you will not be penalized for your absence. Instructors are required to ensure that attendance is recorded for each in-person or synchronous class session. The primary reason for documentation of attendance is to facilitate contact tracing, so that if a student or instructor with whom you have had close contact tests positive for COVID-19, the university can contact you. Recording of attendance will also provide an opportunity for outreach from student services and/or academic support units to support students should they become ill. Faculty and students agree to act in good faith and work with mutual flexibility. The expectation is that students will be honest in representing class attendance.

Video Recording & Sharing Policy:

Any recordings permitted in this class can only be used for the student's personal educational use. Students are not permitted to copy, publish, or redistribute audio or video recordings of any portion of the class session to individuals who are not students in the course or academic program without the express permission of the faculty member and of any students who are recorded. Distribution without permission may be a violation of educational privacy law, known as FERPA as well as certain copyright laws. Any recordings made by the instructor or university of this course are the property of Temple

University. Any unauthorized redistribution of video content is subject to review by the Dean's office, and the University Disciplinary Committee. Penalties can include receiving an F in the course and possible expulsion from the university. This includes but is not limited to: assignment video submissions, faculty recorded lectures or reviews, class meetings (live or recorded), breakout session meetings, and more.

Academic Integrity – ZERO TOLERANCE

Plagiarism and academic dishonesty can take many forms. The most obvious is copying from another student's materials, but the following are also forms of this:

- Copying materials directly from the Internet (or another source) without a proper citation crediting the author
- Turning in an assignment from a previous semester as if it were your own
- Having someone else complete your assignment and submitting it as if it were your own
- Signing someone else's name to an attendance sign-in sheet
- Use of assignments completed in one class as any part of a project assigned in another class
- Sharing/copying homework assignments.
- Use of unauthorized notes during an examination
- In cases of cheating, both parties will be held equally responsible, i.e. both the student who shares the work and the student who copies the work.

There will be zero tolerance for blatant plagiarism or any other type of academic dishonesty. In particular, plagiarizing someone's work (be it a classmate's or on the Internet) is strictly prohibited. Under this zero tolerance policy, in any occurrence of academic cheating, a formal complaint will immediately be filed with the University Discipline Committee (UDC). This incident will be listed on the student's permanent academic record. The instructor will not discuss the penalty for violating this policy and simply direct the student to this paragraph in the class syllabus.

Academic Honesty

Temple University believes strongly in academic honesty and integrity. Plagiarism and academic cheating are, therefore, prohibited. Essential to intellectual growth is the development of independent thought and a respect for the thoughts of others. The prohibition against plagiarism and cheating is intended to foster this independence and respect.

Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, another person's assistance. Normally, all work done for courses -- papers, examinations, homework exercises, laboratory reports, oral presentations -- is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources -- journals, books, or other media -- these resources must be cited in a manner appropriate to the course. It is the instructor's responsibility to indicate the appropriate manner of citation. Everything used from other sources -- suggestions for organization of ideas, ideas themselves, or actual language -- must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism.

Academic cheating is, generally, the thwarting or breaking of the general rules of academic work or the specific rules of the individual courses. It includes falsifying data; submitting, without the instructor's approval, work in one course which was done for another; helping others to plagiarize or cheat from one's own or another's work; or actually doing the work of another person.

The penalty for academic dishonesty can vary from receiving a reprimand and a failing grade for a particular assignment, to a failing grade in the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense, the individual instructor, the department, and the school or college.

Students who believe that they have been unfairly accused may appeal through the School or College's academic grievance procedure. See Grievances under Student Rights in this section.

Source: <http://bulletin.temple.edu/undergraduate/about-temple-university/student-responsibilities/#academichonesty>

Turnitin Canvas Plagiarism Framework

All major written assignments and presentations will be automatically submitted to Turnitin within Canvas for originality. Turnitin detects word patterns that are identical to those in other digitally available work, which includes, peer-reviewed papers, blogs, newspaper articles, and previously submitted student work. Any identical wording between deliverables and that of any other work submitted digitally can be detected easily – if a quote is not appropriately marked and sourced, it constitutes as plagiarism.

Disability Statement

Any student who has need of accommodation based on the impact of a disability should contact the instructor privately to discuss the specific situation as soon as possible. Contact Temple University's Disability Resources and Services (DRS) office at (215)204-1280 located in the Howard Gittis Student Center South, 4th Floor to coordinate accommodations for students with documented disabilities. Please contact the instructor and the DRS within the first week of class, at the beginning of the semester. DRS will establish a student's needs and make necessary arrangements with faculty. If the student chooses not to contact DRS, he/she will be unable to receive accommodations retroactively, once exams are completed and/or course grades are submitted. Such decisions are made jointly between the DRS office and the instructor, at their discretion based on circumstances. Accommodation letters must be received by the instructor during the first two weeks of the semester.

Student Support Services

The following academic support services are available to support you:

- Student Success Center - <https://studentsuccess.temple.edu/>
- Online Tutoring - <http://www.temple.edu/class/programs/writing/tutoring.html>
- Business Communication Center - foxbcc@temple.edu and <https://www.fox.temple.edu/institutes-centers/bcc/>
- Writing Center - <https://www.cla.temple.edu/wconline/>
- University Libraries - <https://library.temple.edu/webpages/remote-learner-support>
- Career Center - <https://www.temple.edu/life-at-temple/students/careers-and-internships/career-center>)
- Tuttleman Counseling Services - <https://counseling.temple.edu/access-services>
- Disability Resources and Services - <https://disabilityresources.temple.edu/>

If you are experiencing food insecurity or financial struggles, Temple provides resources and support. Notably, the Temple University Cherry Pantry (<https://studentcenter.temple.edu/cherry-pantry>) and the Temple University Emergency Student Aid Program (<https://careteam.temple.edu/emergency-student->

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[aid-0](#)) are in operation as well as a variety of resources from the Office of Student Affairs (<https://studentaffairs.temple.edu/>).