Introduction to Information Security Management
MISM Course F23-95752A
Fall 2023

Carnegie Mellon University

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Time: 5:00 – 6:20 EST, Monday & Wednesday
Web site: http://www.cmu.edu/canvas/

Textbooks

- Pfleeger, Charles P., Pfleeger, Shari L., and Coles-Kemp, Lizzie. *Security in Computing 6th Edition*. Addison-Wesley. Pearson Education, Inc., 2023. Print *ISBN:978-0-13-789121-4 (SC) (REQUIRED)*

https://learning.oreilly.com/library/view/security-in-computing/9780137891375/
When prompted to "Select your institution", select "Not Listed? Click here.". Enter your CMU Andrew email address and password, when prompted for your "Academic email".

- Rice, David. *Geekonomics: The Real Cost of Insecure Software*. Upper Saddle River, NJ: Pearson Education, 2008. Print *ISBN: 978-0-32-21735973 (GS) (OPTIONAL)*

https://www.oreilly.com/library/view/geekonomics-the-real/9780321477897/?ar
When prompted to "Select your institution", select "Not Listed? Click here.". Enter your CMU Andrew email address and password, when prompted for your "Academic email".

Prerequisite and Requirements:

None

Course Description

This course is intended to give students an introduction to a variety of information and cyber security topics. As an introductory course, it will cover foundational technical concepts as well as managerial and policy topics. The purpose of the course lectures, assignments, reading, in-class presentations, and examinations are to ensure students have sufficient technical awareness and managerial competence that will enable them to pursue advanced study in information security policy and management as they progress through their program. There is no prerequisite for this course, however successful students will have fundamental knowledge of information and computer systems, and a general awareness of security issues in these systems.

Learning Objectives

Upon completion of this course, the student will obtain an understanding and will apply key concepts, including:

Learning Objective(s)
Foundational concepts of cyber and information security and the key practices and processes for managing security effectively.
Basic network fundamentals – including (but not limited to) topologies, protocols, address conservation, and services, and the security issues that affect networks.
Basic cryptology and why it is fundamental to computer and information security.
Software program deficiencies and the vulnerabilities associated with them.
Access controls and authentication as they are used to secure systems and how they can be mitigated.
Security vulnerabilities that affect operating systems and how they can be mitigated.
The use of risk management to plan, implement, and administer security programs and processes.
The key elements of incident management; detection, remediation, and recovery.
How to translate security into a business driver that is critical to meeting the organization's mission.
Legal, ethical, and regulatory issues that shape policy development and the ways in which organizations implement and administer security.
The organizational and societal costs of insecurity software.

Each learning objective will be assessed via the following mechanisms: Feedback during lectures; assignments; discussion of reading assignments; in-class presentations; and examinations.

Schedule *(tentative…subject to change during semester)*

Course Week	Lecture Topic	Readings/References
August 28	*Course Administration* *Introduction* *Vulnerability Management*	SC: Forward *SC: Chapter 1* *GS: Chapter 1 & 2*
September 4	***NO CLASS Sept. 4, Labor Day*** *Program Security, Part 1*	SC: Chapter 3
September 11	*Program Security, Part 2*	SC: Chapter 3 *GS: Chapter 3*
September 18	*Operating System Security*	SC: Chapter 5
September 25	*Web Security*	SC: Chapter 4 *GS: Chapter 4*
October 2	*Database Security*	SC: Chapter 7 *GS: Chapter 5*
October 9	*Database Security* ***Mid Term Exam – October 11, 2023***	SC: Chapter 7
October 16	***Fall Break – No Classes***	
October 23	*Network Security – Part 1*	SC: Chapter 6
October 30	*Network Security – Part 2*	SC: Chapter 6
November 6	*Elementary Cryptology*	SC: Chapter 2 SC: Chapter 12
November 13	*Cloud Computing*	SC: Chapter 8 *GS: Chapter 6*
November 20	*Incident Management* ***NO CLASS – Nov 23, Thanksgiving Break***	SC: Chapter 10 *GS: Chapter 7*
November 27	*Risk Management* *Privacy*	SC: Chapter 9 SC: Chapter 11
December 4	*Legal Issues and Ethics*	SC: Chapter 9 SC: Chapter 11
December 11	***Final Exam*** *– Dec 11, 2023; 1:00 pm EST* https://www.heinz.cmu.edu/current-students/final-exam	HBH A301

Assignments

There will be **three** homework assignments and each will be focused on analysis of topics relevant to the course lectures and current events in cyber and information security. Two assignments before mid-term exam; one assignments after mid-term. Each assignment will be announced on Canvas with requirements for submission.

Students will only have 2 weeks after an assignment or exam is returned to question or challenge a grade. After the two week challenge period, the grade will not be changed. Please contact the instructor if you wish to question a grade.

Mid Term Exam

The midterm exam will cover material from the first half of course. The midterm exam is scheduled for October 11, 2023, 5:00 – 6:20. Please do not schedule anything that might conflict with the final exam. *No one will be excused from it and there will be no make-up exam dates. Logistics will be provided 2 weeks prior to the exam.*

Final Exam

The final exam will cover material from the second half of the course. The Final exam is scheduled for the week of December 11, 2023 (date / time to be determined; *https://www.heinz.cmu.edu/current-students/final-exam*) . Please do not schedule anything that might conflict with the final exam. *No one will be excused from it and there will be no make-up exam dates. Logistics will be provided 2 weeks prior to the exam.*

Research Report

Students of management and policy must gain skills and confidence in expressing difficult technical and managerial concepts to decision and policy makers, particularly those who provide funding for key organizational initiatives. For this reason, students in this course will develop a paper based upon readings from publically available sources that will demonstrate his/her ability to communicate technical constructs/challenges/issues clearly and effectively.

Incident Analysis: Presentation / Threat Intelligence Report (*Recorded Video/Audio*)

Students of management and policy must gain skills and confidence in expressing difficult technical and managerial concepts to decision and policy makers, particularly those who provide funding for key organizational initiatives. For this reason, students in this course will develop a 10 minute executive briefing, to be delivered to the class, on a security incident described in publically available information.

Extra Credit (*OPTIONAL*)

Student will have two opportunities to obtain additional points, to be added to your mid-term exam and final exam by writing a 1-page executive summary on a cybersecurity current event. Students must submit extra credit submission one no later than October 9, 2023 and submission two no later than December 6, 2023. Additional guidance will be provided.

Evaluation Method

Assignments	15%
Incident Analysis	15%
Mid-Term Exam	25%
Final Exam	25%
Research Report	20%
Total	100%

Grading Scale

100 – 98	A+	81 – 80	B-
97 – 92	A	79 – 78	C+
91 – 90	A-	77 – 72	C
89 – 88	B+	71 – 70	C-
87 – 82	B		

Please note that class attendance is important. Although I don't include attendance as part of the total percentage making up your grade, failure to attend class on a regular basis will have an adverse effect on your grade.

Grade Distribution

I plan on using the Heinz School guidelines in deciding on the overall grade distribution. Accordingly, the average grade will be an A-. However, I grade on an absolute scale. If every student does well in the class, each will get an A+ regardless of the recommended grading scale. The same holds true on the other end of the scale.

Late assignment policy

Homework is due at 5:00 pm (EST) on the assigned due date. I WILL NOT accept late homework unless the student has made arrangements with me prior to the assignment's due date. *PRIOR ARRANGEMENTS MUST BE MADE NO LATER THAN 12 PM EST ON THE DUE DATE.*

Policy on cheating and plagiarism

For Assignments 1 through 3, the Incident Analysis and Threat Intelligence Report, and the Research Report (abstract and outline and final report), each student is responsible for handing in his/her own work. For any assignment found to be the partial or complete result of cheating or plagiarism, your grade for that assignment will be zero (at a minimum), https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html. Cheating is defined as inappropriate collaboration among students on an assignment or failure to cite others work used in the semester paper or in-class presentation. This can include copying someone else's work with or without alteration. When students are found to be collaborating in this way, *BOTH* will pay the penalty regardless of who originated the work.

To best support your own learning, you should complete all graded assignments in this course yourself, without any use of generative artificial intelligence (AI). Please refrain from using AI tools to generate any content (text, video, audio, images, code, etc.) for an assignment or classroom exercise. Passing off any AI generated content as your own (e.g., cutting and pasting content into written assignments, or paraphrasing AI content) constitutes a violation of CMU's academic integrity policy (https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html). If you have any questions about using generative AI in this course please email or talk to me.

Classroom Etiquette

This is a Master's level course taught as part of a professional degree program. Accordingly, you are expected to conduct yourself in a professional manner during the course and not engage in behavior in the class that would be considered unacceptable in the workplace.

I expect the following guidelines to be followed:

- Do not sleep in class
    - I realize you may occasionally have had a rough day, are unwell, or otherwise are too tired to stay awake. In those cases, it is acceptable to excuse yourself from that class.
    - If you are always too tired to stay awake during lectures, you should consider finding an alternative course offering.
    - If you find the material boring, please let me know. I will attempt to modify the content to better suit your interests and needs.

- Turn off your cell phones. You are not to answer calls while in class. If you have a need to be available during class, please let me know before the lecture begins.

- Please don't browse the web, instant message, or check email during lectures. If you use your laptop for taking notes, please inform me prior to class.

- If you have a question about the content of the lecture, please direct it to me. If you are confused about an issue, chances are your classmates are confused as well. Please do not ask for clarification from your classmate during lecture.

Take Care of Yourself

Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner than later is often helpful.

If you or anyone you know experience any academic stress, difficult life events, or feel anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is available to help: call 412.268.2922 and visit the website: http://www.cmu.edu/counseling/ . Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.