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Enterprise Security
CIS4213
Class Periods/Location: Tu, Period 4, 10:40-11:30am, FLG0280,
Th, Period 4-5, 10:40-12:35, FLG0260
Academic Term: Spring 2024

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Instructor:
Cheryl Resch
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Office Hours: Monday 4-5 pm, Thursday 1-2pm or by appointment, MALA4110

Peer Mentors:
- Adam Hassan, adamhassan@ufl.edu
- Nymish Chintanippu, nchintanippu@ufl.edu

Course Description

Provides an introduction to the real-world aspects of defending an enterprise network. Students will gain hands-on experience performing system security tasks and handling incidents. The class begins with a basic introduction to enterprise cybersecurity, the attack sequence, and managing cybersecurity. Then lecture, homework and lab activities cover the center for internet security's essential security controls.

Course Pre-Requisites

CDA 3101

Course Objectives

By the end of the semester, students should be able to

- Identify and think critically about weaknesses in an enterprise network
- Assess risk and prioritize problem areas
- Identify controls to mitigate risk

Required Textbooks and Software

None

Recommended Materials

None

Week	Dates	Topic	Lab / Assignment	HW
1	1/9 – 1/11	Introduction	none	
2	1/16 – 1/18	Risk management	Radical risk reduction	Write a question for JHU/APL CIO

3	1/23 – 1/25	Visit from JHU/APL CIO	Networking Anomalies: Policy Implementation	Pick an enterprise. Make a risk report. Use the DBIR to identify common attacks on this type of enterprise.
4	1/30-2/1	Inventory and control of hardware and software assets, data protection File system maintenance	Assuring accurate asset inventories	
5	2/6-2/8	Network infrastructure, network monitoring, DMZs, proxy servers, secure network design	In depth with layered defense	Pick an enterprise. Use "Pretty Safe Electronics" as a guide. Make a rudimentary network design for your enterprise. Will you have a DMZ? A proxy server?
6	2/13-2/15	Secure configuration of enterprise assets and software Secure installation, removing unnecessary components Shutting down unnecessary services	Raising the Stakes: Security by the Book	
7	2/20-2/22	Account management, access control management	Local admin no more: security by design	Pick an enterprise. Discuss RBAC for your enterprise. Who should have

		User restrictions, user/group/file management		access to assets. Make an access control list
8	2/27-2/29	Password management Penetration Testing	Secure domain accounts and passwords? Definitely worth doing	
9	3/5-3/7	Continuous vulnerability scanning, application software security	Vulnerability Scan Complete: Begin System Hardening	
10	3/19-3/21	Patch management Virtualization	Security begins and never ends with updates	Pick an enterprise that would benefit from virtualization. Discuss why virtualization would be a good solution for this enterprise.
11	3/26-3/28	Email and web browser security Malware Defenses	Malicious mail management	
12	4/2-4/4	Audit log management, data recovery	Legitimate logging logistics	Research an attack
13	4/9-4/11	Incident response Shutting down unnecessary services	Insider threat: domain lockdown coming	
14	4/17-4/19	Security awareness and training Service provider management	System administration: Cyber Defense Edition	
15				Take home final

NICE Labs 70% - 13 with one drop
Homeworks – 15%
Take home final – 15%

NICE Labs
Labs must be completed on Thursdays. You're expected to do them in class. The labs will be a cooperative group exercise. Questions that accompany the labs are due on Friday.

I'll get you a NICE account after the first week of class. Look for an email inviting you to set up your account.

The NICE portal can be found at portal.nice-challenge.com.

Homeworks
Homeworks are due on the date stated. Homeworks will be checked for plagiarism. Doing research is encourage. Copy-pasting is plagiarism.

If you insist on using ChatGPT for assignments, read what you wrote. ChatGPT tends to overdo it on the prose. I reserve the right to get annoyed with over-the-top prose that doesn't seem like it just flowed from your mind to the document and dock points. Read what ChatGPT created and tone it down if necessary.

Final Exam
Final exam is take home. It will be submitted on Canvas and checked for plagiarism.

Grading Policy

Percent	Grade	Grade Points
93 - 100	A	4.0
90.0 – 92.9	A-	3.7
87 - 89.99	B+	3.3
83 - 86.99	B	3.00
80.0 – 82.99	B-	2.7
77 - 79.99	C+	2.3
73 - 76.99	C	2.0
70.0 - 72.99	C-	1.7
67 - 69.99	D+	1.3
63 - 66.99	D	1.0
60.0 - 23.99	D-	0.7
0 - 59.99	E	0.0

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students Requiring Accommodations
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

In-Class Recording
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
• Pamela Dickrell, Associate Dean of Student Affairs, pld@ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: https://counseling.ufl.edu, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling; https://career.ufl.edu.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/;https://care.dso.ufl.edu.

On-Line Students Complaints: *https://distance.ufl.edu/state-authorization-status/#student-complaint*.