Information Security Management
MASY1-GC 3220 | 103 | Spring 2024 | 01/22/2024 -05/06/2024 | 3 Credit
Modality: In-Person
Course Site URL: https://brightspace.nyu.edu/

General Course Information
Name/Title: Adjunct Instructor Alexander Grijalva
NYU Email: ag2722@nyu.edu
Class Meeting Schedule: 01/22/2024 -05/06/2024| Mondays | 06:20pm -- 9:35pm
Class Location: BLDG: 7E12 Room: 321
Office Hours: I At a mutually convenient time using ZOOM. An appointment is required in advance.

Description
This course focuses on the importance of protecting data and information in today's digital world as related to strategy and policy, awareness, data classification, ownership, and accountability, monitoring and reporting. The course covers network components that comprise the environment, where the data are input, processed, stored and how the data travel through the Intranet, Extranet, and/or Internet. Upon completion of the course, students learn to assess the impact of data in the digital world, considering the steps that the Government, Corporations, and the Private Sector take to protect information assets. Students gain an understanding of components that comprise network security and how each component provides protection. They become familiar with preventative and detective tools such as anti-malware, ACL, virus protection, cryptography, intrusion detection, audit logs, and logical and physical controls and perform information risk assessments.

Prerequisites
1240 - Information Technology and Data Analytics

Learning Outcomes
At the conclusion of this course, students will be able to:
- Apply the key principles of information security to the value of data and technologies in the digital world
- Analyze different security frameworks used by Government, Corporations, and the Private Sector to protect digital asset
- Design a digitally secure environment to protect business information assets
- Justify how each digital security component provides protection from threats
- Support the decision to select and use preventive, detective, and responsive security elements
- Perform information security risk assessment to quantify and address high risk occurrences

Communication Methods
Be sure to turn on your NYU Brightspace notifications and frequently check the "Announcements" section of the course site. This will be the primary method I use to communicate information critical to your success in the course. To contact me, send me an email. I will respond within 24 hours.

Credit students must use their NYU email to communicate. Non-degree students do not have NYU email addresses. Brightspace course mail supports student privacy and FERPA guidelines. The instructor will use the NYU email address to communicate with students. All email inquiries will be answered within 24 hours.

Structure | Method | Modality
There are 14 session topics in this course. The session topics are organized in a way to include each student's participation and information sharing, as well as, learning from the Professor's experiences.

This course is in-person and will meet once a week on Mondays. Brightspace is the learning management system we will use for announcements, assignments, examinations, and communications. Students must check Brightspace for course material and use it for course communications. Course work includes in-class lectures and discussions, reading assignments, hands-on exercises, quizzes, and exams.

Expectations

Learning Environment
You play an important role in creating and sustaining an intellectually rigorous and inclusive classroom culture. Respectful engagement, diverse thinking, and our lived experiences are central to this course, and enrich our learning community. We learn by sharing our respective experiences and providing constructive feedback and informed opinions.

Participation
You are integral to the learning experience in this class. Be prepared to actively contribute to class activities, group discussions, and work outside of class. Respect for the opinions of others and openness to new ideas is vital for both students and instructor. To successfully complete the course, students must complete all assignments and exams, and participate in online discussions.

Assignments and Deadlines
Assignments must be submitted when due. There will be a 10% point deduction for late assignments. Please submit all assignments to the appropriate section of the course site in NYU Brightspace. If you require assistance, please contact me BEFORE the due date.

Course Technology Use
We will utilize multiple technologies to achieve the course goals. I expect you to use technology in ways that enhance the learning environment for all students. All class sessions require use of technology (e.g., laptop, computer lab) for learning purposes. Students will be using Shodan for various exercises. Students must register with Shodan using their NYU

student email address, otherwise Shodan will limit their access to the free tier. There is no cost to use Shodan. Additionally, we will use virtual computers. Your ability to use virtualization software, such as VirtualBox and Parallels (for Macs), will depend on your personal computer's configuration. Parallels, which is an Apple product, must be purchased.

Feedback and Viewing Grades
I will provide timely meaningful feedback on all your work via our course site in NYU Brightspace. You can access your grades on the course site Gradebook.

Attendance
I expect you to attend all class sessions. Attendance will be taken into consideration when determining your final grade.

Excused absences are granted in cases of documented serious illness, family emergency, religious observance, or civic obligation. In the case of religious observance or civic obligation, this should be reported in advance. Unexcused absences from sessions may have a negative impact on a student's final grade. Students are responsible for assignments given during any absence.

Each unexcused absence or being late may result in a student's grade being lowered by a fraction of a grade. A student who has three unexcused absences may earn a Fail grade.

Refer to the SPS Policies and Procedures page for additional information about attendance.

Textbooks and Course Material
Required: *CompTIA Security+ Guide to Network Security Fundamentals* by Mark Ciampa, G.Michael Schneider, Judith Gersting | 7th Edition | Copyright 2022. ISBN-13: 9780357709597 You can rent the ebook directly from the publisher. https://www.cengage.com/c/comptia-security-guide-to-network-security-fundamentals-7e-ciampa/9780357424377/

There will be other assigned readings from other resources.

Grading | Assessment

10 individual assignments, which are a mixture of hands-on exercises and written assignments based on case studies, current events, or other topics discussed in class. Assignments will be assessed on how well students perform the exercises and how well students apply and communicate key concepts covered in class. Written assignments must adhere to the instructor's format and citation requirements.	30%
Quizzes based on textbook chapters.	30%
Midterm exam covering topics discussed in class and assigned readings.	20%
Final exam covering topics discussed in class and assigned readings.	20%

See the "Grades" section of Academic Policies for the complete grading policy, including the letter grade conversion, and the criteria for a grade of incomplete, taking a course on a pass/fail basis, and withdrawing from a course.

Course Outline
Start/End Dates: 01/22/2024 -05/06/2024 | Mondays
Time: 06:20pm -- 08:55pm
No Class Date(s): Monday, 2/19/2024 and 03/18/2024
Special Notes: Spring Break 03/18/24 - 03/24/24

The course will cover the chapters listed below. Prior to each class session, please read the chapter(s) as listed. Completed assignments must be uploaded to Brightspace under the Assignments tab when due.

Session I, Monday, January 22
Topic Description
- Student and instructor introductions
- Course introduction
- Introduction to information security.

Readings
- Chapter 1
- Additional readings may be assigned. Check Brightspace.

Session 2, Monday, January 29
Topic Description
Threat Management and Cybersecurity Resources

Assignment
Assignment 1

Readings
- Chapter 2
- Additional readings may be assigned. Check Brightspace.

Session 3, Monday, February 5
Topic Description
Threats and Attacks on Endpoints & Endpoint and Application Development Security

Assignment
Assignment 2

Readings
- Chapter 3 and 4
- Additional readings may be assigned. Check Brightspace.

Session 4, Monday, February 12
Topic Description
Mobile, Embedded, and Specialized Device Security

Assignment
Assignment 3

Readings
- Chapter 5
- Additional readings may be assigned. Check Brightspace.

No class on Monday, February 19

Session 5, Monday, February 26
Topic Description
Basic Cryptography

Assignment
Assignment 4

Readings
- Chapter 6
- Additional readings may be assigned. Check Brightspace.

Session 6, Monday, March 4
Topic Description
Public Key Infrastructure and Cryptographic Protocols

Assignment
Assignment 5

Readings
- Chapter 7
- Additional readings may be assigned. Check Brightspace.

Session 7, Monday, March 11
MIDTERM EXAM.

NO CLASS ON MONDAY, MARCH 18

Session 8, Monday, March 25

Topic Description
Networking Threats, Assessments, and Defenses & Network Security Appliances and Technologies

Assignment
Assignment 6

Readings
- Chapter 8 and 9
- Additional readings may be assigned. Check Brightspace.

Session 9, Monday, April 1

Topic Description
Cloud and Virtualization Security

Assignment
Assignment 7

Readings
- Chapter 10
- Additional readings may be assigned. Check Brightspace.

Session 10, Monday, April 8

Topic Description
Wireless Network Security

Assignment
Assignment 8

Readings
- Chapter 11
- Additional readings may be assigned. Check Brightspace.

Session 11, Monday, April 15

Topic Description
Authentication

Assignment
Assignment 9

Readings
- Chapter 12
- Additional readings may be assigned. Check Brightspace.

Session 12, Monday, April 22
Topic Description
Incident Preparation, Response, and Investigation

Assignment
Assignment 10

Readings
- Chapter 14
- Additional readings may be assigned. Check Brightspace.

Session 13, Monday, April 29
Topic Description
Cybersecurity Resilience & Risk Management and Data Privacy

Readings
- Chapter 14 and 15
- Additional readings may be assigned. Check Brightspace.

Session 14, Monday, May 6
FINAL EXAM

*At the discretion of the faculty, the syllabus may be modified to better meet the needs of the students and to achieve the learning outcomes established in the syllabus.

NOTES:

The syllabus may be modified to better meet the needs of students and to achieve the learning outcomes.

The School of Professional Studies (SPS) and its faculty celebrate and are committed to inclusion, diversity, belonging, equity, and accessibility (IDBEA), and seek to embody the IDBEA values. The School of Professional Studies (SPS), its faculty, staff, and students are committed to creating a mutually respectful and safe environment (*from the SPS IDBEA Committee*).

New York University School of Professional Studies Policies

1. <u>Policies</u> - You are responsible for reading, understanding, and complying with University Policies and Guidelines, NYU SPS Policies and Procedures, and Student Affairs and Reporting.

2. <u>Learning/Academic Accommodations</u> - New York University is committed to providing equal educational opportunity and participation for students who disclose their dis/ability to the Moses Center for Student Accessibility. If you are interested in applying for academic accommodations, contact the Moses Center as early as possible in the semester. If you already receive accommodations through the Moses Center, request your accommodation letters through the Moses Center Portal as soon as possible (mosescsa@nyu.edu | 212-998-4980).

3. <u>Health and Wellness</u> - To access the University's extensive health and mental health resources, contact the NYU Wellness Exchange. You can call its private hotline (212-443-9999), available 24 hours a day, seven days a week, to reach out to a professional who can help to address day-to-day challenges as well as other health-related concerns.

4. <u>Student Support Resources</u> - There are a range of resources at SPS and NYU to support your learning and professional growth. For a complete list of resources and services available to SPS students, visit the NYU SPS Office of Student Affairs site.

5. <u>Religious Observance</u> - As a nonsectarian, inclusive institution, NYU policy permits members of any religious group to absent themselves from classes without penalty when required for compliance with their religious obligations. Refer to the University Calendar Policy on Religious Holidays for the complete policy.

6. <u>Academic Integrity and Plagiarism</u> - You are expected to be honest and ethical in all academic work. Moreover, you are expected to demonstrate how what you have learned incorporates an understanding of the research and expertise of scholars and other appropriate experts; and thus recognizing others' published work or teachings—whether that of authors, lecturers, or one's peers—is a required practice in all academic projects.

Plagiarism involves borrowing or using information from other sources without proper and full credit. You are subject to disciplinary actions for the following offenses which include but are not limited to cheating, plagiarism, forgery or unauthorized use of documents, and false form of identification

Turnitin, an originality detection service in NYU Brightspace, may be used in this course to check your work for plagiarism.

Read more about academic integrity policies at the NYU School of Professional Studies on the Academic Policies for NYU SPS Students page.

7. <u>Use of Third-Party Tools</u> - During this class, you may be required to use non-NYU apps/platforms/software as a part of course studies, and thus, will be required to agree to the "Terms of Use" (TOU) associated with such apps/platforms/software.

These services may require you to create an account but you can use a pseudonym (which may not identify you to the public community, but which may still identify you by IP address to the company and companies with whom it shares data).

You should carefully read those terms of use regarding the impact on your privacy rights and intellectual property rights. If you have any questions regarding those terms of use or the impact on the class, you are encouraged to ask the instructor prior to the add/drop deadline.