

Information Security Management

MASY1-GC 3220 | 100 | Spring 2024 | 01/24/2024 - 05/01/2024 | 3 Credit

Modality: In-person

Course Site URL: <https://brightspace.nyu.edu/>

General Course Information

Name/Title: Shannon Ortiz, Adjunct Instructor, He/Him/His

NYU Email: slo3@nyu.edu

Class Meeting Schedule: 01/24/2024 - 05/01/2024 | Wednesday | 06:20pm - 08:55pm

Class Location: TBD

Office Hours: By appointment via Zoom, arranged through email to: slo3@nyu.edu or 30 minutes prior and after each class.

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.

All communication must be through the Brightspace course-email or via NYU email address – personal or individual corporate email addresses should not be used; this is because Brightspace course-mail and NYU email system supports student privacy and FERPA guidelines. Non-degree students do not have NYU email addresses. All supported email inquiries, either through Brightspace course-email or via NYU email address, will be answered within 24 hours.

Structure | Method | Modality

There are 14 modules in this course. The modules are organized into five (5) areas of study: 1) Security Fundamentals, 2) Endpoint Security, 3) Cryptography, 4) Network Security, and 5) Enterprise Security.

This course is In-person and will meet once a week on Wednesday. Zoom is the online instruction platform used at NYU. Brightspace is the learning management system we will use for assignments, announcements, and emails. Students must check Brightspace website for course assignments. Course work involves in-class lectures, at home readings, in-class discussions, assignments, and exams.

Expectations

Learning Environment

As graduate students, you are expected to conduct yourselves in a professional manner and engage and collaborate with your classmates. SPS classrooms are diverse and include students who range in age, culture, learning styles, and levels of professional experience. To maintain an inclusive environment that ensures all students can equally participate with and learn from each other, as well as receive feedback and instruction from faculty during group discussions in the classroom, all course-based discussions and group projects should occur in a language that is shared among all participants.

Participation

Students are expected to be active participants in the learning experience as opposed to passive receptacles for information. Respect for the opinions of others and openness to new ideas is vital for all participants. For successful completion of this course, students will master the material presented in-person, assigned in readings, communicated through online discussions and from research activities outside of class.

Assignments and Deadlines

Assignments must be submitted when due. All assignments must be typewritten, double-spaced. The assignment will be graded for content, grammar, and clarity. Reading assignments and homework must be accomplished as indicated so that everyone will benefit from an in-depth discussion of issues.

All written assignments are to be in a professional and business standard. Late assignments

will only be accepted in dire situations (illness or other emergency). Late assignments are permitted only with advance notice to, and permission from, the instructor. Missed assignments will lower the student's grade based on the percentage of the grade allocable to it. Late assignments are permitted with an incremental percentage reduction on the homework assignment. 5% for the initial day of lateness, 10% for late assignments up to one week late, additional 10% each additional week late.

Incompletes: IP or F may be granted by the instructor in consultation with the department under extraordinary extenuating circumstances. A student seeking an incomplete grade must make a request to the faculty prior to the end of the semester and must complete at least 50% of the course.

If you are unable to maintain the pace of the course, it is your responsibility to comply with the **PROCEDURE FOR DROPPING A COURSE**. If you wish to drop your course, you **MUST** notify your academic advisor. In order to not receive an F for the course, you must inform your instructor as well. Please see the NYUSPS academic policies and procedures link below for more information.

Plagiarism is strictly prohibited. See specific Plagiarism section for more details

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.

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 Materials

Students can purchase these items through the NYU Bookstore.

* Digital version is acceptable. Hardcopy is not required.

Required:

Mark Ciampa, CompTIA Security+ Guide to Network Security Fundamentals, Seventh Edition. Cengage, 2022, ISBN 10: 0357424379 ISBN 13: 978-0357424377

Grading | Assessment

The student's final grade in this course will be comprised of the following:

Assignment Grading Rubric

Course Tasks	Percentage
10 Individual Assignments. Each assignment will be a mix of review questions and case studies based on topics discussed in class. Assignments will be assessed on how well students apply key concepts covered in class, the depth of research conducted, the thoroughness of security/risk analysis, and the logical flow of the written work.	40%
Quizzes. Short 5-10 multiple choice or short answer questions, covering topics discussed in class and recent chapter reading assignments.	10%
In-Class Participation. Students are expected to read the required materials and be engaged in topics discussed in class.	10%
Midterm Exam. Short answer questions, covering topics discussed in class.	20%
Final Exam. Short answer questions, covering topics discussed in class.	20%
Total	100%

Criteria	Levels of Achievement			Possible
	1	2	3	
Content - Explanation of Ideas & Information	Presents information, findings, arguments and supporting evidence clearly, concisely, and logically; audience can	Presents information, findings, arguments and supporting evidence in a way that is not always clear, concise, and logical; line of reasoning is	Does not present information, arguments, ideas, or findings clearly, concisely, and logically; argument lacks supporting	40

	<p>easily follow the line of reasoning.</p> <p>Selects information, develops ideas, and uses a style appropriate to the purpose, task, and audience.</p> <p>Clearly and completely addresses alternative or opposing perspectives.</p> <p>Key responses fully articulated and answered completely. Clear and focused explanations.</p> <p>40%</p>	<p>sometimes hard to follow.</p> <p>Attempts to select information, develop ideas, and use a style appropriate to the purpose, task, and audience but does not fully succeed.</p> <p>Attempts to address alternative or opposing perspectives, but not clearly or completely.</p> <p>Some responses fully articulated.</p> <p>Basic understanding and explanation of the topic.</p> <p>21-39%</p>	<p>evidence; audience cannot follow the line of reasoning.</p> <p>Selects information, develops ideas, and uses a style inappropriate to the purpose, task, and audience.</p> <p>Does not address alternative or opposing perspectives.</p> <p>Key responses missing or not answered.</p> <p>Minimal to no understanding or explanation of the topic.</p> <p>0-20%</p>	
Mechanics (Spelling & Grammar)	<p>No spelling or grammar errors. Writing is clear and concise. Assignment has logical/sequential organization.</p> <p>20%</p>	<p>1-5 spelling or grammar errors. Assignment is clear and organized.</p> <p>10%</p>	<p>Multiple, > 5, spelling and grammar errors. Assignment lacks organization.</p> <p>0-9%</p>	20
Research	<p>Adequate research used and cited.</p> <p>20%</p>	<p>Some research used or cited.</p> <p>10-19%</p>	<p>Little to no research used or cited.</p> <p>0-9%</p>	20
Timeliness	<p>Assignment delivered on time, before due date.</p> <p>20%</p>	<p>Assignment delivered within 1 day after due date. Reduction of grade.</p>	<p>Assignment delivered within 2-7 days after due date.</p>	20 (Up to -100 for late or incomplete)

		-5% for a day late	Reduction of grade.	
			-10% for each week late	

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: 01/24/2024 - 05/01/2024 | Wednesday

Time: 06:20pm -- 08:55pm

No Class Date(s): Wednesday, 3/20/2024

Special Notes: Spring Break 03/18/24 - 03/24/24

Session 1 - 01/24/24

Topic Description

- Course Intro, Introduction to Security

Assignments:

- Assignment 1
- Readings - Chapter 1 and 2

Session 2 – 01/31/24

Topic description

- Threat Management and Cybersecurity Resources

Assignments:

- Assignment 2
- Readings - Chapter 3 and 4

Session 3 – 02/07/24

Topic description

- Threats and Attacks on Endpoints & Endpoint and Application Development Security

Assignments:

- Assignment 3
- Readings - Chapter 5

Session 4 – 02/14/24

Topic description

- Mobile, Embedded, and Specialized Device Security

Assignments:

- Assignment 4
- Readings - Chapter 6

Session 5 – 02/21/24

Topic description

- Basic Cryptography

Assignments:

- Assignment 5
- Readings - Chapter 7

Session 6 – 02/28/24

Topic description

- Public Key Infrastructure and Cryptographic Protocols

Assignments:

No assignment - Good luck on your midterm!

- Readings - Chapter 8 and 9

Session 7 – 03/06/24 - MIDTERM EXAM

Session 8 – 03/13/24

Topic description

- Networking Threats, Assessments, and Defenses & Network Security Appliances and Technologies

Assignments:

- Assignment 6
- Readings - Chapter 10

Spring Break – NO CLASS – 3/20/24

Session 9 – 03/27/24

Topic description

- Cloud and Virtualization Security

Assignments:

- Assignment 7
- Readings - Chapter 11

Session 10 – 04/03/24

Topic description

- Wireless Network Security

Assignments:

- Assignment 8
- Readings - Chapter 12

Session 11 – 04/10/24

Topic description

- Authentication

Assignments:

- Assignment 9
- Readings - Chapter 13

Session 12 – 04/17/24

Topic description

- Incident Preparation, Response, and Investigation

Assignments:

- Assignment 10
- Readings - Chapter 14 and 15

Session 13 – 04/24/24

Topic description

- Cybersecurity Resilience & Risk Management and Data Privacy

Assignments:

- No assignment - Good luck on your final!

Session 14 – 05/01/24 - FINAL EXAM

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. Policies - You are responsible for reading, understanding, and complying with [University Policies and Guidelines](#), [NYU SPS Policies and Procedures](#), and [Student Affairs and Reporting](#).
2. Learning/Academic Accommodations - 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. Health and Wellness - 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. Student Support Resources - 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. Religious Observance - 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. Academic Integrity and Plagiarism - 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. Use of Third-Party Tools - 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.