

**Cybersecurity and the Social Sciences (CYSE 201S)**  
**School of Cybersecurity Old Dominion University**

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**Course Introduction :-**

Cybersecurity is typically conceived as a technical topic. In reality, the topic is multi-disciplinary, and some aspects of the topic are best understood through a social science lens. This course addresses the social, political, legal, criminological, and economic dimensions of cybersecurity through a social science framework. Students are introduced to a human-factors approach to understanding cybersecurity threats. Attention is given to the social factors that contribute to cyber incidents and the political and legal mechanisms that are developed to control the behaviors of those who create risks in cybersecurity incidents. The class also explores how cybersecurity is studied by social scientists in psychology, political science, criminology, economics, sociology, international studies, and other social science disciplines.

**Learning Outcomes :-**

After completing this class, students will be able to:

- Compare how basic psychological, sociological, criminological, political, economic, and legal theories and models explain cybersecurity
- Identify the strengths and weaknesses of those theories in understanding the connections between human behaviors and cybersecurity
- Define key concepts including cybersecurity, cybercrime, cyber criminology, cyber law, digital forensics, human factors, cyber policy, cyber risk, cyber threats, and cyberwar.
- Identify how professionals in various cybersecurity careers apply these multidisciplinary concepts in their daily routines
- Describe how hypotheses and research questions are formed in studies addressing cybersecurity through a social science lens
- Describe how data are collected, measured, and analyzed in studies addressing cybersecurity through a social science lens
- Identify how marginalized groups have confronted challenges and concerns related to cybersecurity as well as how these groups have contributed to our understanding about the topic.
- Explain how the application of social science theories, principles, and research strategies have contributed to our understanding of cybersecurity at the societal level.

**Readings :-**

Bhattacharjee, A. (2012). [Social Science Research: Principles, Methods, Practices](#)  
Select open access articles to be provided.

## Assignments :-

Initial ePortfolio submission	12.50 points
Discussions [10 Discussions]	12.50 points
Exam 1	100 points
Exam 2	100 points
Quiz 1	25 points
Quiz 2	25 points
Final ePortfolio	45 points
Article Review #1	50 points
Article reviews #2	50 points
Career professional paper	50 points
Journal Entries [15 Entries]	30 points
Total points:	500 points

## Weightage :-

Group	Weight
Quiz and Exams [Quiz 1 & 2 and Test 1 & 2]	50%
Initial ePortfolio	2.50%
Discussions [10]	2.50%
Final ePortfolio [Should contain all weekly Journal Entries, Article reviews, Career Paper]	9%
Weekly Journal Entries [15]	6%
Article Review 1 & 2	20%
Career Professional Paper	10%
Total	100%

*Note: Extra credit assignments may be added as deemed necessary by the instructor. [ Total final grade is calculated for 100 % and this extra credit scores will boost your final grade]*

*Note: Final ePortfolio should be live and contain your introduction, photo, review articles, weekly Journal entries and Career Professional Paper.*

## Grading :-

Total points earned by the students will be summed, divided by 500 and multiplied by 100 followed by the allocated weightage for each category. The grades will be assigned with the following scale:

100% to 94%	<94% to 90%	<90% to 87%	<87% to 84%	<84% to 80%	<80% to 77%	<77% to 74%	<74% to 70%	<70% to 67%	<67% to 64%	<64% to 60%	< 60% to 0%
A	A-	B+	B	B-	C+	C	C-	D +	D	D-	F

*Note: Grade Distribution may be revised as deemed necessary by the instructor*

- For example, we have 90 - <94 A- and 94 -100 A, and if you get 93.99 and your grade will be A- only.

## Journal Reviews :-

At different times during the semester, the professor will ask students to answer general questions related to cybersecurity through a social science lens. Students will answer the questions and then enter them in their ePortfolio. For instance, when discussing cybersecurity through a criminological lens, students might be asked to review articles linked with each individual motive. The student might be asked to rank the motives and explain the rationale. Or when discussing cybersecurity and psychology, students might be asked to watch an assigned video and then write a journal entry about how they think the media influences societal understanding about cybersecurity. The journal entries are meant to be opinion-type assignments, though the opinions should be supported with social science evidence. The table below shows the types of journal questions students will be asked to respond to throughout the semester and how they relate to the course learning outcomes.

Note: The word count for the journal entries and discussions should be in between 100 -150 words.

Journal review example	Learning outcome
Read <a href="#">this</a> article and compare and contrast how different social science theories relate to the topic.	Compare how basic psychological, sociological, criminological, political, economic, and legal theories and models explain cybersecurity
Which social science theories do you think best explain the connections between human behaviors and cybersecurity? What are the strengths and weaknesses of those theories?	Identify the strengths and weaknesses of those theories in understanding the connections between human behaviors and cybersecurity
What is cybercrime? How is the concept of cybercrime related to cyber law? What is meant when scholars say that all cybercrimes are not necessarily illegal?	Define key concepts including cybersecurity, cybercrime, cyber criminology, cyber law, digital forensics, human factors, cyber policy, cyber risk, cyber threats, and cyberwar.

Why do cybersecurity professionals need to know the difference between cyber policy and cyber law?	Identify how professionals in various cybersecurity careers apply these multidisciplinary concepts in their daily routines.
How might researchers develop research questions and hypotheses to study <a href="#">Social Cybersecurity?</a>	Describe how hypotheses and research questions are formed in studies addressing cybersecurity through a social science lens
How well do you think data was collected, measured and analyzed in <a href="#">White-Collar Cybercrime: White-Collar Crime, Cybercrime, or Both?</a> Explain.	Describe how data are collected, measured, and analyzed in studies addressing cybersecurity through a social science lens
Why do you think women are less likely to enter cybersecurity careers? How can we better understand cybersecurity by exploring the topic through a gender or racial lens?	Identify how marginalized groups have confronted challenges and concerns related to cybersecurity as well as how these groups have contributed to our understanding about the topic.
Have social scientists improved our understanding of cybersecurity at the national level? Explain.	Explain how the application of social science theories, principles, and research strategies have contributed to our understanding of cybersecurity at the societal level.

## Electronic Portfolio (ePortfolio) :-

Each student will maintain an ePortfolio describing their progress through the class.

[https://docs.google.com/document/d/1QIMpzNuvjZnwF8Wsc6kt\\_0Z0Szx4mXXnyluwuOtoZy8/edit?usp=sharing](https://docs.google.com/document/d/1QIMpzNuvjZnwF8Wsc6kt_0Z0Szx4mXXnyluwuOtoZy8/edit?usp=sharing)

[ePortfolio & Digital Initiatives | Old Dominion University \(odu.edu\)](#) will provide you the how to create an ePortfolio. I highly encourage you to make an appointment with this ePortfolio team if you don't already have an ePortfolio.

The assignments for this class should be integrated into your ePortfolio. These assignments will include academic and reflective writing. It is a requirement in this class for you to either create or add to your ePortfolio. Your ePortfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. In addition to the assignments, the e-Portfolio should include at least five photos depicting your thoughts about cybersecurity and the social sciences and one video related to the topic. When you finish your time at ODU, your ePortfolio will then be a multi-media showcase of your educational experience. A video showing how to create ePortfolios is available on Canvas. ODU tutorials are also available on [Youtube](#). If you would like in-person help with your ePortfolio please visit <https://www.odu.edu/asis/eportfolio/student-resources> or schedule an appointment with an ePortfolio Assistant. Your initial e-Portfolio should be submitted to the professor by the end of the third week of class. It will be up to you to update the ePortfolio as your progress through the class. The instructor will evaluate the ePortfolio at the end of the semester based on these criteria: (1) inclusion of all assignments, (2) integration of academic and practical knowledge, (3) inclusion of required photos and videos, and (4) clarity of ideas presented.

### **Article Reviews :-**

On two occasions during the semester, Students will write an **article review** using social science cybersecurity studies and should follow the rubric closely.

Article 1 review will be derived from a scholarly journal.

Article 2 review will be derived from a different scholarly journal than your Article 1 review.

Open and easy to access journals that students might select articles from include:

International Journal of Cyber Criminology: <https://www.cybercrimejournal.com/>

International Journal of Cybersecurity Intelligence & Cybercrime: <https://vc.bridgew.edu/ijcic/>  
and Journal of Cybersecurity: <https://academic.oup.com/cybersecurity>

The reviews should focus on (1) how the topic relates to the principles of the social sciences, (2) the study's research questions or hypotheses, (3) the types of research methods used, (4) the types of data and analysis done, (5) how concepts discussed in class relate to the article, (5) how the topic relates to the challenges, concerns, and contributions of marginalized groups, and (6) the overall contributions of the studies to society.

Well-graded papers are between 350 - 500 words. They are constructed using the rubric provided in this syllabus. The professor uses Turnitin for each of the student submissions.

Important notes: **Do not forget to provide the link to your particular article that you have reviewed. Don't forget to upload into your ePortfolio.**

### **Cybersecurity Career Professional Paper :-**

Select a type of cybersecurity career and write a two-page paper describing how professionals in that career require and depend on social science research and social science principles in those careers. Pay specific attention to the key concepts learned in class and demonstrate how those concepts are applied in the career you selected. The focus should be on demonstrating how the material from class relates to cybersecurity professionals' daily routines. Specific attention should be given to how the career relates to marginalized groups and society in general. Students should use at least three reliable sources to write the paper.

### **Policy on Lateness :-**

The following paragraph describes the late penalties.

- **Assignments/ Journal entries/Discussions: No retake or late submission is allowed.**
- **Quizzes and Exams – No retake or late submission is allowed.**

No excuses other than documented hospital excuses will be accepted for missed assignments. Even hospital stays require prompt notification to the instructor.

## Exams :-

The exams will include multiple choice, true and false, and short answer/essay questions. The short answer/essay questions will be designed to assess how well students demonstrate competence relative to the course learning outcomes. Sample short answer/essay questions include:

- Describe how social scientists help to address issues related to cybersecurity in businesses and across different levels of government?
- Describe five social science theories that help us to understand cybersecurity breaches. Which theory do you think is most useful in helping to understand breaches? Which is least useful? Explain.
- Apply the seven principles of social science addressed in class to cybersecurity.
- How do cybersecurity issues perpetuate the marginalization of women and minorities?
- Describe the stages of a social science cybersecurity study.
- Compare and contrast the terms cybercrime, cybersecurity, cyber policy, and cyber law? Why is it important for social scientists to focus on these concepts?

## Course Outline :-

Week	Topic	Readings and Assignments
1	Introduction to Course Introduction to the Social Sciences	Bhattacharjee (2012) ( <a href="#">ch. 1-2</a> ) Post to Discussion Board (pg 3 and pg 8) <a href="#">Begin working on individualized ePortfolio</a> Journal entry (page/slide 28) to be uploaded in ePortfolio
2	Principles of Social Sciences and Cybersecurity  Diversity and Cybersecurity	Mountrouidou et al. (2019). <a href="#">Securing the human: A review of literature on broadening diversity in cybersecurity education</a>  National Academies Press. (2019). <a href="#">Integrating Social and Behavioral Research to Enhance Security in Cyberspace</a> Post to Discussion Board (page/slide 14) Journal entry #2 (page/slide 16) – upload to ePortfolio
3	Strategies to Study Cybersecurity through an Interdisciplinary Social Sciences Lens	Bhattacharjee (2012) ( <a href="#">ch. 3</a> ) No Discussion Board Journal #3 (page/slide 12) – upload to ePortfolio
4	Cybersecurity and Human Factors	Bhattacharjee (2012) ( <a href="#">ch. 4</a> )  Back & LaPrade (2019). <a href="#">The future of cybercrime prevention strategies: Human factors and a holistic approach to cyber intelligence</a> Post to Discussion Board (page/slide 14)

		Journal #4 (page/slide 22) upload to ePortfolio
5	Applying Psychological Principles of Cyber Offending, Victimization, and Professionals	Whitty (2018). <a href="#">Do You Love Me? Psychological Characteristics of Romance Scam Victims (liebertpub.com)</a> Post to Discussion Board (page/slide 13) Journal #5 (page/slide 4) upload to ePortfolio
6	Psychology Research, Human Factors, and Cybersecurity	Nobles, (2018). <a href="#">Botching Human Factors in Cybersecurity in Business Organizations.</a> Post to Discussion Board (page/slide 15) Journal #6 (pg 22) upload to ePortfolio
7+++	Cybersecurity and the Social Dimensions of Data Science	Wilner, A. (2018). <a href="#">Cybersecurity and its discontents: Artificial intelligence, the Internet of Things, and digital misinformation.</a> No post to Discussion Board Journal #7 (page/slide 20) upload to ePortfolio
8	Social dynamics, social structures, and cybersecurity	Debb et al. (2020). <a href="#">A reverse digital divide: Comparing information security behavior of Generation Y and Generation Z adults</a>  Payne, May, & Hadzhidimova (2012). <a href="#">America's most wanted criminals: Comparing cybercriminals and traditional criminals</a> No post to Discussion Board Journal #8 page/slide 27) upload to ePortfolio
9	Culture, Social Media and Cybersecurity	Jethwani et al. (2017). <a href="#">I can actually be a cyber sleuth: Engaging adolescent girls in cybersecurity</a> Post to Discussion Board (pg 20) Journal #9 (page/slide 38) upload to ePortfolio
10	Social Cybersecurity	Beskow & Karley, (2019). <a href="#">Social Cybersecurity.</a> Post to Discussion Board (page/slide 21) Journal #10 (page/slide 6) upload to ePortfolio Journal #11 (page/slide 32) upload to ePortfolio
11	The Economics of Cybersecurity	Moore, T. (2010). <a href="#">The economics of cybersecurity: Principles and policy options</a> Post to Discussion Board (page/slide 8) Journal #12 (page/slide 19) upload to ePortfolio Journal #13 (page/slide 28) upload to ePortfolio
12	Conceptualizing cybersecurity as a crime – Part 1	Payne & Hadzhimova (2018). <a href="#">Cybersecurity and Criminal Justice Programs in the United States: Exploring the Intersections.</a>

		Payne & Hadzhimova (2020). <a href="#">Disciplinary and Interdisciplinary Trends in Cybercrime Research: An Examination</a> No post to Discussion Board Journal #14 (page/slide 7) upload to ePortfolio
13	Conceptualizing cyber behaviors as crime – Part 2.	Payne (2019). <a href="#">White-Collar Cybercrime: White-Collar Crime, Cybercrime, or Both?</a> Post to Discussion Board (page/slide 33) No Journal entry Upload Career paper to Assignment and ePortfolio
14	Studying and Addressing Cyber Harm through a Criminological and Political Framework  <b>All artifacts uploaded to ePortfolio</b>	Finnemore & Hollis, (2018). <a href="#">Constructing Norms for Global Cybersecurity</a> Post to Discussion Board (page/slide 19) Journal #15 (page/slide 28) upload to ePortfolio
15	<b>Final Exam</b>	

### Academic Dishonesty :-

Dishonesty (i.e., cheating) will not be tolerated. University procedures will be followed in the event that academic dishonesty is discovered. The most common form of academic dishonesty is plagiarism. According to Section 3.F of the Student Disciplinary Policies and Procedures under the Student Code of Conduct: "A student will have committed plagiarism if he or she reproduces someone else's work without acknowledging its source; or if the source is cited which the student has not cited or used (1998). Plagiarism includes submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; making simple changes to borrowed materials while leaving the organization content, or phraseology intact; or copying material from a source, supplying proper documentation, but leaving out quotation marks (1998). Plagiarism also occurs in a group project if one or more of the members of the group does none of the group's work and participates in none of the group's activities but attempts to take credit for the work of the group (1996)." (<http://orgs.odu.edu/hc/pages/plagiarism.shtml>)

### Student Opinion Survey :-

Student Opinion Surveys are an important tool for you to provide anonymous feedback at the end of a course about your instructors, course content, and your overall experience. In order to do so, you must log in to these tools with your MIDAS Account ID and Password. So, please complete the student opinion survey at the end of the semester when you are prompted to do so.



## **Disability Services :-**

Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.

Old Dominion University is committed to ensuring equal access to all qualified students with disabilities in accordance with the Americans with Disabilities Act. The Office of Educational Accessibility (OEA) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you experience a disability which will impact your ability to access any aspect of my class, please present the instructor with an accommodation letter from OEA so that we can work together to ensure that appropriate accommodations are available to you.
- If you feel that you will experience barriers to your ability to learn and/or testing in my class but do not have an accommodation letter, please consider scheduling an appointment with OEA to determine if academic accommodations are necessary.

The Office of Educational Accessibility is located at 1021 Student Success Center and their phone number is (757)683-4655. Additional information is available at the OEA website:

<http://www.odu.edu/educationalaccessibility/>.

**Rubric for Article Reviews (total 50 points) :-**

Article from a Scholarly Journal	Yes (8 points)		No (0 points)	
	Excellent (6 points)	Good (5 points)	Okay (4 points)	Poor (0 points)
Shows how topic relates to social science principles	Shows understanding of how 3 or more principles of social science relate to article	Shows understanding of how 1-2 principles of social science relate to article	Relates article to social science but does not demonstrate understanding	Does not show how article relates to social sciences
Describes research question/hypotheses	Identifies questions and hypotheses and demonstrates full understanding	Identifies questions and hypotheses and demonstrates basic understanding.	Identifies questions or hypotheses but does not explain them.	Does not describe questions or hypotheses.
Describes types of research methods used	Describes research methods and demonstrates full understanding.	Describes research methods and demonstrates basic understanding.	Identifies research methods but does not explain them.	Does not describe research methods.
Describes types of data and analysis done	Describes data and analysis and demonstrates full understanding.	Describes data and analysis and demonstrates basic understanding.	Identifies data and analysis but does not describe them.	Does not describe data or analysis procedures.
Describes how article relates to concepts from class	Identifies how for or more concepts from class relate to articles.	Identifies how 1-3 concepts from class relate to the article.	Identifies concepts from class but provides limited connections.	Does not describe the relationship to class.

Describes how topic relates to the challenges, concerns, and contributions of marginalized groups	Shows how the topic is related to two or more concerns of marginalized groups.	Shows how the topic is related to at least one concern of marginalized groups.	Identifies concerns of marginalized groups but does not connect them to the topic.	Does not relate the articles to marginalized groups.
Describes the overall societal contributions of the study	Identifies two or more contributions of the study.	Identifies at least one overall contribution.	Identifies contributions on a limited scale.	Does not describe overall contributions.
Total:				

**Rubric for Career Professional Paper (total 50 points) :-**

	Excellent (10 points)	Good (8 points)	Okay (6 points)	Poor (4 points)
Student describes how professionals in that career require and depend on social science research and social science principles in those careers	Demonstrates a thorough understanding about the complexities and interdependence between social science principles and cybersecurity.	Demonstrates basic understanding of principles of science and social science research and how they relate to the career.	Describes principles of science but does not show how they are related to the career.	Does not describe principles of social science
Student includes key concepts learned in class and demonstrate how those concepts are applied in the career you selected	Includes four or more concepts from class and applies them accurately to career.	Includes two or three concepts from class and applies them accurately to the career.	Includes two or three concepts from class but does not apply them accurately.	Does not discuss concepts from class.

Students show how careers relate to marginalized groups and the challenges they face.	Provides a thorough discussion about the relationship between the career, marginalized groups, and three or more challenges that arise.	Discusses the relationship between the career, marginalized groups, and one or two challenges that arise.	Relates career to marginalized groups but does not identify challenges.	Does not relate career to marginalized groups.
Students show how careers are related to society.	Demonstrates understanding about the complexities of the dynamic interactions between society and the career.	Demonstrates a basic understanding of the dynamic interactions between society and the career.	Describes how career is impacted by society or how society impacts career but does not consider dynamic interactions	Does not describe how career is related to society
Students used at least three reliable sources.	Three or more reliable sources integrated throughout the paper.	Three reliable sources used.	1-2 reliable sources used.	No reliable sources were used.
Total:				