<u>**COURSE SYLLABUS - SPRING 2022**</u>

CSE 429-001 - Interdisciplinary Topics in Cybersecurity
SCHOOL OF CRIMINAL JUSTICE
MICHIGAN STATE UNIVERSITY
(Revised: 01/2022)

CLASS MEETINGS: Online
INSTRUCTOR: Gary Rudd, Special Agent, US Dept. of Defense, DCIS Cybercrime Field Office
OFFICE HOURS: Online / Phone By Appointment
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<u>**COURSE DESCRIPTION**</u>

In this course we will critically examine the challenge of cybercrime, terror, and warfare and the techniques these groups apply to compromise computer systems and affect public policy. **The course is designed to be primarily a roundtable-like discussion, meaning that you must do the readings/video watching, and be prepared for conversations in the weekly discussion forums**. We will focus primarily on computer hacking and network attacks, given the prominence of hackers in the public eye and questions about the impact of technology on security and public safety. This will help students understand the ways that societies are structuring legal and military policies toward cyberspace, and the intersection of criminality, extremism, and warfighting in on-line spaces. Discussions will center on the history of hacking, attack methods used by various groups, cyber espionage, information warfare, and the difficulties in measuring and combating various forms of cyberattack. The development of security technologies used to defend against these attacks, as well as the laws used to investigate and prosecute these behaviors will be addressed as well.

<u>**COURSE OBJECTIVES:**</u>

To gain a critical understanding of cyber crimes and cyber criminals.
To gain a critical understanding of problems and challenges related to cybersecurity.
To define and categorize, as best as possible, the various types of cybercrimes.
To distinguish between the wide variety of bad actors, their motivations and goals in committing cyber crimes
To be introduced to the various tools and methods used to address and implement cyber security.

To examine the complexities of enforcing and prosecuting cyber based crimes.
To understand the impact of digital crimes on society.

PREREQUISITES

Basic knowledge of computers and computer networking terminology.
Access to the internet and the ability to download and read/watch digital publications and videos

REQUIRED TEXTBOOK:

1) Holt, T., Bossler, A., & Seigfried-Spellar, K. (2018). **Cybercrime and Digital Forensics. An Introduction. Second Edition**   ISBN: 978-1-138-23873

2) Hyslip, T. (2015). **BIT WARS. Cybercrime, Hacking, Information Warfare.** (This is a <u>FREE </u>eBook provided by professor via D2L)

3) Links to various free publications and videos will be provided throughout class via D2L. You are expected to download and read these publications and watch videos on your own and within the timeframes listed below.

COURSE REQUIREMENTS:
Computer with Internet connection
Access to D2L

COURSE EVALUATION:

ITEMS	POINTS EACH	TOTAL POINTS
2 Exams (Mid & FInal)	60 points each	120 Points
1 Paper	100 points	100 points
15 Discussions (~1/week)	20 points each	300 points
6 quizzes	20 points each	120 points
TOTAL		**640 Points**

GRADING SCALE (All fractional points will be rounded UP to next full point) :

Point Range	Grade	Percent
608 - 640	4.0	95% - 100%
576 - 607	3.5	90 - 94%
544 - 575	3.0	85 - 89%
512 - 543	2.5	80% - 84 %
480 - 511	2.0	75% - 79%
448 - 479	1.5	70% - 74%
416 - 447	1.0	65% - 69%

DETAILED COURSE EVALUATION (Exams, Quizzes, Discussions and Paper)

EXAMS:

Two exams will be given during the semester, each counting for 60 points of the total semester grade (120 total). These exams will consist of 30 multiple choice and true/false questions.
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All exams are **open** book/notes/videos/PDF's etc. You are not permitted to take the test as a "team". You have access to all resources and ample time, please take the exam solo and do not discuss the questions with classmates until after the test concludes.

Exam 1 (Weeks 1-7) Opens Monday Feb 28 at 7 AM closes Friday Mar 4 at 11 PM
Exam 2 (Weeks 10-16) Opens Monday May 2 at 7 AM closes Friday May 6 at 11 PM

Unless otherwise pre agreed upon, no exam will be accepted after that point, nor enabled before that time. There will be no make-ups provided (unless extreme circumstances) as you have ample time to arrange your schedule to accommodate the exam period each week. It is your responsibility to complete the assignment in a timely fashion. Questions will be derived from the course readings, videos, PowerPoints and other class material and notes. You will have 120 minutes to complete the exam, and after that time your responses will be automatically submitted.

If you disagree with a question phrasing or an answer please contact me directly as soon as possible after the exam to discuss. I will provide explanations or adjustments once the exam ends.

*NOTE: the mid-term exam will cover course materials from weeks 1 to 7, and the final exam will cover course materials thereafter. In other words, <u>the final exam will **not** be cumulative</u>.*

QUIZZES:

Six 20 point review quizzes will be given throughout the semester that will assess your knowledge on a specific topic(s) covered during the **prior one to two weeks**. Quizzes will generally be available from **<u>Wednesday at 7am to Sunday at 11 PM</u>**. Quizzes will never contain questions related to content from the same week it is given.

No quiz will be accepted after its close time, nor enabled before that time. Quizzes will be 5 to 10 multiple choice or true/false questions. You will have 30 minutes for five questions or 60 minutes for ten questions, to complete each quiz. After that time your quiz grade will be automatically submitted. There will be no make-ups provided for quizzes under any circumstances as you have ample time to arrange your schedule to accommodate a 30-60 minute quiz period that week. It is your responsibility to complete the assignment in a timely fashion.

All quizzes are open book/notes/videos/PDFs etc. You are not permitted to take the quiz as a "team". You have access to all resources and ample time, please take the exam solo and do not discuss the questions with classmates until after the test concludes.

If you disagree with a question phrasing or an answer please contact me directly as soon as possible to discuss. I will provide explanations or adjustments once the quiz ends.

NOTE: the date that each quiz will be available is indicated in bold on the 'Course Schedule' below.

COURSE DISCUSSION POSTS:

This is the core of our class and worth almost 50% of your grade! As an online class we have the disadvantage of not being able to hold in class discussions where we can bounce topics, disagreements and ideas off each other. In order to try and provide that experience the best we can, the class discussions will be the focus of your participation for this class.

Try and wrap up readings and assignments so you can post no later than Wednesday of the week you are assigned the post to leave time for responses and rebuttals you may receive from myself or other students. Unless otherwise instructed, each week for this course, you are required to make **<u>AT LEAST TWO POSTS</u>** addressing a question that will be based on the weekly lesson. Your response must be at least four full complete sentences and give a thoughtful comment about any one of the readings, or response to the comments of your classmates or the instructor. You must give substantive thought to the question demonstrating your ability to synthesize

class material. (eg. "yeah I agree" is not going to count!) **and communicate in a professional and respectful manner representative of your academic level** (eg. "You sound like an idiot" even if true, will not be tolerated). We can and should have disagreements, I encourage playing "devil's advocate" as well, but it must remain respectful - this isn't Reddit!

NOTE: The due date for your postings is technically Sunday of the week of the lesson as indicated on the 'Course Schedule' below. The board will close for new posts Sunday at 11PM but will remain available for viewing all semester. Remember if you wait until Sunday each week for all your posts you will not be able to participate properly in this round table focused class and will lose credit. Please post as early as possible to meet the spirit of this class design. There will be no make-ups or late responses accepted as it is your responsibility to provide a response in the time afforded.

PAPER:

You will be required to write **one, 4 to 5 page paper (1250-1500 words)**. This assignment will require you to answer a question or series of questions as fully as is possible using supporting arguments from the course readings or ask you for an opinion with the requirement to explain in detail your reasoning and ponder a response to possible counter arguments. The paper topic may require you to react to a statement or policy, apply theory to a certain cybercrime, critique a video, or address a current and topical issue in cybercrime and criminal justice. The specific topic and details will be provided on the date listed in the syllabus.

Sources: You must cite a minimum of three separate sources in the course of your paper. One can be my lecture notes/powerpoints, one can be any of the assigned eternal readings/videos and **at least one must be an outside source** that is not part of any of our assigned readings or videos.*The due date for your paper is indicated in bold on the 'Course Schedule' below.*

You will be required to upload your paper to D2L. You must provide a Word doc version, as no other file format will be accepted. Before you turn in your paper, please take the following steps to ensure you get as many points as possible for the assignment:

Read your paper, re-read it again, and then re-read it again. It is important that your ideas are clear, make sense, and flow together properly.

Proof-read your paper for spelling and grammatical errors, both using the spell check and grammar function in Word, as well as by hand. When you input a commonly misspelled term into Word, such as "too" rather than "two", as an example, spellcheck does not identify this mistake but the grammar function might. I recommend you do not rely on these as the sole method of spelling and grammar verification.

Avoid using contractions or colloquial language, as neither belongs in a professional

document. If you use non common abbreviations or acronyms you should define them first for the audience before using them again. As this is a semi-technical course, use of specialized language or terminology is encouraged, however you should assume the reader has only a basic understanding of the topic at hand and therefore define and explain more complex terminology when first introducing it in your writings.

Use APA formatting: Link to [Purdue Online Writing Lab](#)

When citing an author, make sure you are citing them appropriately. In addition, I recommend that you avoid quoting an author unless it is absolutely necessary. Instead, put the ideas into your own words and paraphrase the source, as doing so suggests that you understand the material you are drawing from. If you put an author's ideas into your own words, you must reference the author at the end of the sentence.

You will receive a 0 if you plagiarize these assignments.

The paper will be graded based on the following components:

1.   Content: maximum of 75 points
2.   Organization: maximum of 10 points
3.   Language, grammar and structure: maximum of 15 points

In order to receive full credit for the paper, it must be turned in before the due date (late submission will receive an automatic 10 point deduction per day. You must provide a substantive and relevant exploration of the topic and demonstrate a clear understanding of it in an analytical and persuasive manner. Assignments should be well-written, with arguments clearly and logically articulated, and using appropriate citations.

COURSE GUIDELINES:

D2L

Electronic copies of the course syllabus, assignment instructions, and schedule updates will be available on the D2L page for this course. A valid MSU NetID and password are required to access D2L.

To access D2L, login through https://d2l.msu.edu and then click on the course name. If you are experiencing problems with D2L, visit http://help.d2l.msu.edu or call the Help Desk at (800) 500-1554.

NOTE: if you are registered in this course and cannot access it via D2L after the second week of class, please contact me and I will determine why you cannot access the course.

CONTACTING THE INSTRUCTOR:

E-mails must be sent from your valid MSU email account if you wish to receive a reply from me. Please remember to conduct yourself in a professional manner when corresponding via email and sign your email with your full name, simply so I know who you are. Please ensure the email subject line includes "CSE-429 [SUBJECT]", and do not mark emails as urgent except in exceptional circumstances that signify an actual emergency.

I do travel a lot for work and it may take me up to 48 hours (Mon-Fri) for a response to an email, if you do not hear from me within that time frame (or need a quicker reply) please feel free to send a follow up or call/text me. I will generally be checking emails throughout each day but operational activities may limit that to evenings. Due to the nature of my work, occasionally I will be in facilities or areas where I have no internet or communication ability during normal business hours. If this happens for any extended amount of time, I will post a notice letting you know in advance. My goal is to be as available to all of you as often as possible. I will do my best to communicate when circumstances get in the way of that. Given the uniqueness of online learning, it is best when we are able to work together on ensuring good communication practices throughout this course.

LATE ASSIGNMENTS:

Penalties will be assigned for late assignments. If you are unable to attend an exam or meet a deadline, you are required to provide advanced notice and appropriate documentation.

To ensure fair treatment of all students enrolled in this class, late submissions will only be exempt from late penalties if there is clear evidence of "exceptional" and "unanticipated" circumstances. Circumstances must be beyond anyone's control and preclude your ability to follow the course schedule as written. They do not include too many projects due at the same time, attending a family wedding over the course of a weekend, or the neighborhood dog ate my USB thumb drive. Instead, rare and extreme circumstances that are completely out of your control and leave you completely unable to meet your responsibilities to the course will be considered. In such cases, please inform me of your concerns at the earliest possible opportunity, and provide the appropriate and detailed documentation at the earliest possible time (e.g., a medical note).

UNIVERSITY POLICIES: (_AKA "Now a word from our lawyers…"_)

ACADEMIC HONESTY:

Article 2.3.3 of the Academic Freedom Report states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." In addition, the (insert name of unit offering course) adheres to

the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See [Spartan Life: Student Handbook and Resource Guide](#) and/or the MSU Web site: [www.msu.edu](#).) Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com Web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the [Academic Integrity](#) webpage.)

LIMITS TO CONFIDENTIALITY:

Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. As the instructor, I must report the following information to other University offices (including the Department of Police and Public Safety) if you share it with me:
--Suspected child abuse/neglect, even if this maltreatment happened when you were a child,
--Allegations of sexual assault or sexual harassment when they involve MSU students, faculty, or staff, and
--Credible threats of harm to oneself or to others.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting you are encouraged to make an appointment with the MSU Counseling Center.

SIRS:

Michigan State University takes seriously the opinion of students in the evaluation of the effectiveness of instruction, and has implemented the SIRS (Student Instructional Rating System) process to gather student feedback. This course utilizes the "online SIRS" system. You will receive an email sometime during the last two weeks of class asking you to fill out the SIRS online form at your convenience. Please note the final grade for this course will not be accessible on STUINFO for seven days following the University grade submission deadline published by the Office of the Registrar unless the

SIRS online form has been filled out. You will have the option on the online SIRS form to decline to participate in the evaluation of the course – we hope, however, that you will be willing to give us your frank and constructive feedback so that we may instruct students even better in the future..

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

DROPS AND ADDS:

The last day to add this course is Friday, January 14
The last day to drop this course with a 100 percent refund is Friday, February 4
The last day to drop this course with no refund and no grade reported is Wed. March 2

COMMERCIALIZED LECTURE NOTES:

Commercialization of lectures, lecture material and university-provided course materials is not permitted in this course.

DISRUPTIVE BEHAVIOR:

Article 2.III.B.4 of the Academic Freedom Report (AFR) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.III.B.10 of the AFR states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Judicial Affairs office.

INTERNET: Some professional journals will not consider a submission for publication if the article has appeared on the Internet. Please notify your instructor in writing if you do not want your course papers posted to the course Web site.

ATTENDANCE: Students whose names do not appear on the official class list for this course may not attend this class. Students who fail to attend the first four class sessions or class by the fifth day of the semester, whichever occurs first, may be dropped from the course

COURSE SCHEDULE

Below is a general schedule of the weekly topics, course readings, course tasks and key academic dates. This schedule is subject to change, so it is important to check D2L for any updates. Changes will be communicated to you through announcements on D2L. You will be given at least one week's notice prior to any changes. **All Reading assignments listed below are core weekly starting material, Additional small readings/videos will be posted with each weeks announcement and included in content tabs.**

Reading Abbreviations:

CADF = Holt, T., Bossler, A., & Seigfried-Spellar, K. (2018). Cybercrime and Digital Forensics. An Introduction

BITWARS = Hyslip, T. (2015). BIT WARS. Cybercrime, Hacking, Information Warfare.

Week #	Key Dates	Title & General Topics Overview	Readings, Tests, Assignments & Notes
1	**Week of Jan 10-16** **Jan 10 All Classes Start - Spring 2022**	**Welcome aboard and Introductions**	<u>**Readings (Optional early start)**</u>: Watch Welcome Video Read and Review Course Syllabus *Get an early start reading for Week 2 Recommended:* *CADF: Chapters 1-3* *Bitwars: Chapters 1-3* <u>**Tasks**</u>: Discussion Post 1

2	**Week of Jan 17-23** **Monday Jan 17** **HOLIDAY** **MSU OPEN NO CLASSES**	**Computer Hackers and Cybercrime Laws**	<u>**Readings**</u>: CADF: Chapters 1- 3 Bitwars: Chapters 1-3 Read and Review other D2L items <u>**Tasks**</u>: Discussion Post 2
3	**Week of Jan 24-30**	**Cyber Underground, Forums, and Deep Web**	<u>**Readings:**</u> BITWARS: Chapter 9 Read and Review other D2L items <u>**Tasks:**</u> Quiz 1: Weeks 1-2 Discussion Post 3
4	**Week of Jan 31-Feb 6** **Feb 4** **Last day to drop class with 100% refund**	**Malware, Vulnerabilities and Exploits** *I will post your paper topic on Mon Jan 31* *(Due April 17)*	<u>**Readings:**</u> CADF: Chapter 4 Bitwars: Chapter 4 Read and Review other D2L items <u>**Tasks:**</u> Discussion Post 4

5	**Week of Feb 7 - 13**	**Online Extremism and Cyber Terrorism**	<u>**Readings:**</u> CADF: Chapter 10 Bitwars: Chapter 5 <u>**Tasks**</u>: Quiz 2: Weeks 3-4 Discussion Post 5
6	**Week of Feb 14-20**	**Information Warfare** ***Criminal Justice Virtual Career Fair - February 16th, 2022, from 3pm to 6pm***	<u>**Readings:**</u> CADF: Chapter 10 BITWARS: Chapter 6 <u>**Tasks**</u>: Discussion Post 6
7	**Week of Feb 21-27**	**Information Warfare Case Study:** **Russia and Georgia** **Exam 1 Review and Q&A - One on one if needed (Optional)**	<u>**Readings:**</u> White, S. (2018). Understanding Cyberwarfare: Lessons from the Russia-Georgia War. Modern War Institute, West Point USMA. https://mwi.usma.edu/wp-content/uploads/2018/03/Understanding-Cyberwarfare.pdf <u>**Tasks:**</u> Quiz 3: Weeks 5-6 Discussion Post 7

8	**Week of Feb 28 - Mar 6** **March 2 - Last day to drop course with no refund and no grade reported is**	**EXAM 1** **WEEKS 1-7**	<u>**Exam 1**</u> Opens: Feb 28 (**MONDAY** @ 7am) Closes: Mar 4 (**FRIDAY** @ 11PM)
9	**Week of Mar 7-13** **NO CLASSES**	# SPRING # BREAK **NO CLASSES**	# SPRING # BREAK **NO CLASSES**
10	**Week Of Mar 14 - 20**	**Cyber Espionage** **Cyber Espionage Case Study; China APT1**	<u>**Readings:**</u> Mandiant. (2013, Nov.). Mandiant APT1 Report; Exposing One of China's Cyber Espionage Units. Mill Rd., Alexandria, VA.: Mandiant Corp: https://www.fireeye.com/content/dam/fireeye-www/services/pdfs/mandiant-apt1report.pdf Read and Review other D2L items <u>**Tasks**</u>: Discussion Post 8

11	**Week of Mar 21 - 27**	**Information Operations**	**Readings:** Weedon, J., Nuland, W. & Stamos, A. (2017). Information Operations and Facebook. (posted on D2L) Read and Review other D2L items **Tasks:** Quiz 4: Week 10 Discussion Post 9
12	**Week of Mar 28 - Apr 3**	**Hacktivism**	**Readings:** BITWARS: Chapter 8 Read and Review other D2L items **Tasks:** Discussion Post 10
13	**Week of Apr 4 - 10**	**Introduction to Cyber Security**	**Readings:** Read and Review D2L items **Tasks**: Quiz 5: Weeks 11-12 Discussion Post 11

14	**Week of Apr 11 - 17**	**Cyber Security Technology**	<u>**Readings:**</u> Read and Review D2L items <u>**Tasks:**</u> Discussion Post 12 ==**Papers Due Sunday Apr 17 @ 11 PM**==
15	Week of Apr 18 - 24	**Human Factors in Cyber Security**	<u>**Readings:**</u> Read and Review D2L items <u>**Tasks:**</u> Discussion Post 13
16	Week of Apr 25 - May 1 **Friday April 29 Classes End**	**CASE STUDY -RECENT CYBER INCIDENT** **REVIEW AND DISCUSSION** **Exam 2 Review and Q&A - One on one if needed (Optional)**	<u>**Readings**</u>: Read and Review D2L items <u>**Tasks:**</u> Discussion Post 14 and Discussion Post 15: "Post-Graduation Work/School Plans" Quiz 6: Weeks 13-15
17	Week of May 2 - 6	**EXAM 2** **WEEKS 10-16**	Opens: May 2 (**MONDAY** @ 7am) Closes: May 6 (**FRIDAY** @ 11PM) **GOOD LUCK!!!**

ADDITIONAL NOTES

The Criminal Justice Career Fair is scheduled for Wednesday, February 16th, 2022, from 3pm to 6pm. The Career Fair will be held virtually, utilizing the Handshake Career Services Tool that each of our students has access to. The job market is quite strong, and it is important that ALL of our CJ Students (Freshmen through Seniors) participate in this Career Fair.

Underclassmen can learn about part-time jobs and internships, while also learning valuable information about agencies and making professional connections within them. Upperclassmen can learn about high-level internships, as well as full-time jobs, while making valuable professional connections with agencies of interest.

KEY ACADEMIC DATES:

Monday, January 10	Classes begin
Friday, January 14	Last day for students to add this class w/o permission
Monday, January 17	Martin Luther King Day - No classes/University open
Friday, February 4	Last day to drop class with full refund
Wednesday, March 2	Middle of semester - Last day to drop with no grade reported
Mon.-Fri., March 7-11	Spring Break
Friday, April 29	Classes end
Mon.-Fri., May 2-6	Finals Week
Monday, May 2	Online grading available
Tuesday, May 10	Grades due by 4:00 pm