Webster UNIVERSITY

Joint Base Myer/Henderson Hall · George Herbert Walker School of Business & Technology · Mathematics/Computer Science

Cybersecurity Strategic Operations CSSS-5140

S1 2021   Section HH   3 Credits   01/04/2021 to 03/05/2021   Modified 12/22/2020

🕐 Meeting Times

Classroom Instruction

Tuesday, 6pm to 10pm
Joint Base Myer-Henderson Hall

Class will meet via Zoom - the link will be posted in WorldClassroom

NOTE: ALL NCR courses begin at 6 pm (EST) – sometimes, *even after reviewing,* the time reverts to a different time zone.

👤 Contact Information

Instructor: James E. P. Miller, CISSP, MA

Email: jamesmiller14@webster.edu
Phone: (W) 703-614-2015

Cell/Text: 703-254-3497 (Essential Only) Usually only on from 0600-0630 and 1600-2100.

🖥 Description

Specific methods, ethics, laws, policies and procedures for conducting strategic operations and countermeasures are the focus of this course. Students will learn how to identify critical infrastructures, communication channels, and information protection schemes and how to detect threats, assess vulnerabilities, penetrate and exploit cyber targets, understand how to monitor, spoof, redirect and deny access, as well as protect critical assets.

Requisites
CSSS 5000 Introduction to Cybersecurity (3)

◎ Objectives

📊 Outcomes

After completing this course, students will:

- Know and understand how to identify communication channels, information protection schemes and how to detect threats, assess vulnerabilities, penetrate and exploit cyber targets, understand how to monitor, spoof, redirect and deny access, as well as protect critical assets.
- Summarize and demonstrate an understanding of the vocabulary of Cybersecurity terms and phraseology.
- Acquire and differentiate a broad understanding of the Cybersecurity strategic operations environment, including methods, ethics, laws, policies and procedures.
- Demonstrate and differentiate a basic working knowledge of Cybersecurity strategic operations as well as an awareness of current targets, vulnerabilities, and growing threats. Describe the roles, responsibilities, and tools of a Cybersecurity system technician, project and/or program manager.
- Summarize and discuss an understanding of the basics of the Comprehensive National Cybersecurity Initiative (CNCI).

🌐 Required Textbook

Cybersecurity and Cyberwar: What Everyone Needs to Know

Author: Singer, Friedman
Publisher: Oxford University Press

Edition: 2014
ISBN: 978-0199918119

📘 Materials

Textbook title and ISBN posted here:

http://www.bkstr.com/websteronlinestore/home

Start here - follow drop down menus

☰ Deliverables

Case Study 1: Security Breaches

2-4 page paper (Double spaced), APA Formatted; 5-10 minute presentation with 3-5 slides.

Case Study 2: Advanced Persistent Threats

2-4 page paper (Double spaced), APA Formatted; 5-10 minute presentation with 3-5 slides.

Research Paper: Cybersecurity Strategic Operations

10-12 page paper (Double spaced) APA Formatted; 10-15 minute presentation with 5-10 slides.

✔ Evaluation

Type	Weight	Topic	Notes
Weekly Presentations	10%	Current Events	
Case Study 1	15%	Security Breaches	2-4 page paper 10%; 5-10 minute presentation with 3-5 slides 5%
Exam	15%	Mid Term Exam	
Case Study 2	15%	Advanced Persistent Threats	2-4 page paper 10%; 5-10 minute presentation with 3-5 slides 5%
Exam	20%	Final Exam	
Research Paper	25%	Cybersecurity Strategic Operations Research	10 page paper 20%; 10 min, 5-10 slide presentation 5%

📅 Schedule

When	Topic	Notes

When	Topic	Notes

Week 1	5 Jan	Class Intro
		Review Syllabus and Deliverables
		Intro to Cyberspace Governance, Strategy, and Policy
		Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 1-36
		Be prepared to disucss 2008 Pakistan Incident (p 21)
		                John Postel Example (p 26)
		
		Additional Reference;
		CISSP for Dummies pp 153-180 (Information Security Governance and Risk Management)
		                pp 449-461 (Certifications)
		                pp 461-464 (Security Websites)

Week 2	12 Jan	Weekly Presentations Vulnerabilities Threats Defense Case Study Preparation Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 36-66 Additional Reference; CISSP for Dummies pp 301-332 (Security Operations) pp 413-439 (Physical (Environmental) Security)
Week 3	19 Jan	First Case Study Due Student Case Study Briefings Cyber Attack Cyber Espionage Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 67-96 Read: Why Russia Turns a Blind Eye to Cybercriminals <https://slate.com/technology/2018/02/why-the-russian-government-turns-a-blind-eye-to-cybercriminals.html (https://slate.com/technology/2018/02/why-the-russian-government-turns-a-blind-eye-to-cybercriminals.html)>
Week 4	26 Jan	Weekly Presentations Cyber Attack Cyber War Case Study Preparation Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 96-165

Week 5	2 Feb	Weekly Presentations
		What Can We Do? Part 1
		     Resilience
		     Limits of State In Cyberspace
		     What is Government's Role?
		Mid Term Exam
		Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 166-205
		
		Print and read; Comprehensive National Cybersecurity Initiative. PDF downloadable from:
		https://fas.org/irp/offdocs/nspd/nspd-54.pdf (https://fas.org/irp/offdocs/nspd/nspd%E2%80%9054.pdf)
		
		Print and Read; "In Cyberwar: There Are No Rules". PDF downloadable from: https://foreignpolicy.com/2018/09/12/in-cyberwar-there-are-no-rules-cybersecurity-war-defense/ (https://foreignpolicy.com/2018/09/12/in-cyberwar-there-are-no-rules-cybersecurity-war-defense/)
		
		Print and Read; "In Cyberwar: There Are Some (Unspoken) Rules". PDF downloadable from: https://foreignpolicy.com/2018/11/06/in-cyberwar-there-are-some-unspoken-rules-international-law-norms-north-korea-russia-iran-stuxnet/ (https://foreignpolicy.com/2018/11/06/in-cyberwar-there-are-some-unspoken-rules-international-law-norms-north-korea-russia-iran-stuxnet/)

Week 6	9 Feb	Second Case Study Due Student Case Study Briefings Review Mid Term Exam Continue lectures from class 5 Cyberspace Operations

When	Topic	Notes
Week 7	16 Feb	Weekly Presentations What Can We Do? Part 2 Exercises Information Sharing Workforce National Strategy to Secure Cyberspace Read; Cybersecurity and Cyberwar; What Everyone Needs to Know pp 205-247 Print and read; National Strategy to Secure Cyberspace (2003) PDF downloadable from: https://www.us-cert.gov/security-publications/national-strategy-secure-cyberspace (https://www.us-cert.gov/security-publications/national-strategy-secure-cyberspace) Print and Read; National Cyber Strategy for the United States of America (2018): PDF downloadable from: https://www.whitehouse.gov/wp-content/uploads/2018/09/National-Cyber-Strategy.pdf (https://www.whitehouse.gov/wp-content/uploads/2018/09/National-Cyber-Strategy.pdf) Print and Read; Department of Defense Cyber Strategy 2018. PDF downloadable from: https://media.defense.gov/2018/Sep/18/2002041658/-1/-1/1/CYBER_STRATEGY_SUMMARY_FINAL.PDF (https://media.defense.gov/2018/Sep/18/2002041658/-1/-1/1/CYBER_STRATEGY_SUMMARY_FINAL.PDF) Print and read; How the US is Trying to Shape Norms in Cyberspace: http://thediplomat.com/2015/07/how-the-us-is-trying-to-shape-norms-in-cyberspace/ (2015/07/how-the-us-is-trying-to-shape-norms-in-cyberspace/)
Week 8	23 Feb	Weekly Presentations Blue Print for a Secure Cyber Future Legal Course Evaluation Scan; The Law of Cyber-Attack: Oona A, Hathaway, Rebecca Crootof, Philip Levitz, Haley Nix, Aileen Nowland, William Perdue, Julia Spiegel. (2012). PDF downloadable from: http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=4844&context=fss_papers (http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=4844&context=fss_papers) Print and Read; Blueprint for a Secure Cyber Future: The Cybersecurity Strategy for the Homeland Security Enterprise. Department of Homeland Security. (2011). PDF downloadable from: http://www.dhs.gov/xlibrary/assets/nppd/blueprint-for-a-secure-cyber-future.pdf (http://www.dhs.gov/xlibrary/assets/nppd/blueprint-for-a-secure-cyber-future.pdf) Print and Read: Cyberattacks trigger talk of 'hacking back': http://www.washingtonpost.com/business/technology/cyberattacks-trigger-talk-of-hacking-back/2014/10/09/6f0b7a24-4f02-11e4-8c24-487e92bc997b_story.html (http://www.washingtonpost.com/business/technology%20/cyberattacks-trigger-talk-of-hacking-back/2014/10/09/6f0b7a24-4f02-11e4-8c24-487e92bc997b_story.html) Print and Read: How To Hack Back Legally with the FBI's Help: http://www.fifthdomain.com/civilian/fbi-doj/2017/07/26/how-to-hack-back-legally-with-the-fbis-help-black-hat-2017 (http://www.fifthdomain.com/civilian/fbi-doj/2017/07/26/howto-%20hack-back-legally-with-the-fbis-help-black-hat-2017/?utm_source=Sailthru&utm_medium=email&%20utm_campaign=EBB%207.27.17&utm_term=Editorial%20-%20Early%20Bird%20Brief) Additional Reference; CISSP for Dummies pp 371-412 (Legal, Regulations, Investigations, and Compliance)
Week 9	2 Mar	Turn in Research Paper Students Brief Research Final Exam ONLINE EVALUATION: https://evaluation.webster.edu (https://evaluation.webster.edu) available weeks 8 & 9

✳ Course Policies

Academic honesty is expected and will be detailed in class regarding assignments.

Please silence all cell phones during class (set to vibrate for emergency calls is acceptable). Even while meeting remotely a ringing phone can be distracting.

🏛 Institutional Policies

Academic Policies

Academic policies provide students with important rights and responsibilities. Students are expected to familiarize themselves with all academic policies that apply to them. Academic policies for undergraduate students can be found in the Undergraduate Studies Catalog; graduate students should review the Graduate Studies Catalog.

Undergraduate Studies Catalog

The Undergraduate Studies Catalog contains academic policies that apply to all undergraduate students. The *academic policies and information* section of the catalog contains important information related to **attendance, conduct, academic honesty, grades, and more**. If you are an undergraduate student, please review the catalog each academic year. The current Undergraduate Studies Catalog is at:

http://www.webster.edu/catalog/current/undergraduate-catalog/ (http://www.webster.edu/catalog/current/undergraduate-catalog/)

Graduate Studies Catalog

The Graduate Studies Catalog contains academic policies that apply to all graduate students. The *academic policies* section of the catalog contains important information related to **conduct, academic honesty, grades, and more**. If you are a graduate student, please review the catalog each academic year. The current Graduate Studies Catalog is at:

http://www.webster.edu/catalog/current/graduate-catalog/ (http://www.webster.edu/catalog/current/graduate-catalog/)

Grading

The Grades section of the academic catalog outlines the various grading systems courses may use, including the information about the final grade reported for this class.

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html#grading
(http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html#grading)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html#grades
(http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html#grades)

Incomplete

There are important policies that govern grades of Incomplete (I), including the circumstances under which Incomplete grades are granted, deadlines for completion, and consequences should the remaining course work not be completed. It is the responsibility of a student who requests an Incomplete to ensure that he/she understands and follows the policies.

Grade Appeals

Instructors are responsible for assigning grades, and student should discuss grade issues with the instructor. Policies and procedures for appealing grades are available in the appropriate catalog.

Academic Honesty Policy

Webster University is committed to academic excellence. As part of our Statement of Ethics, we strive to preserve academic honor and integrity by repudiating all forms of academic and intellectual dishonesty, including cheating, plagiarism and all other forms of academic dishonesty. Academic dishonesty is unacceptable and is subject to a disciplinary response. Students are encouraged to talk to instructors about any questions they may have regarding how to properly credit others' work, including paraphrasing, quoting, and citation formatting. The university reserves the right to utilize electronic databases, such as Turnitin.com, to assist faculty and students with their academic work.

The University's Academic Honesty Policy is published in academic catalogs:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html
(http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html
(http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html)

As a part of the University commitment to academic excellence, the Academic Resource Center provides student resources to become better acquainted with academic honesty and the tools to prevent plagiarism in its many forms:

http://www.webster.edu/arc/plagiarism_prevention/ (http://www.webster.edu/arc/plagiarism_prevention/)

Statement of Ethics

Webster University strives to be a center of academic excellence. The University makes every effort to ensure the following:

- The opportunity for students to learn and inquire freely
- The protection of intellectual freedom and the rights of professors to teach
- The advancement of knowledge through scholarly pursuits and relevant dialogue

To review Webster University's statement of ethics, see the Undergraduate Studies Catalog and the Graduate and Studies Catalog:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/overview.html#ethics (http://www.webster.edu/catalog/current/undergraduate-catalog/overview.html#ethics)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/ethics.html (http://www.webster.edu/catalog/current/graduate-catalog/ethics.html)

Contact Hours for this Course

It is essential that all classes meet for the full instructional time as scheduled. A class cannot be shortened in length. If a class session is cancelled for any reason, the content must be covered at another time.

Important Academic Resources

Academic Accommodations

Webster University makes every effort to accommodate individuals with academic/learning, health, physical and psychological disabilities. To obtain accommodations, students must identify themselves and provide documentation from a qualified professional or agency to the appropriate campus designee or the Academic ADA Coordinator at the main campus. The Academic ADA Coordinator may be reached at 314-246-7700 or disability@webster.edu (mailto:disability@webster.edu).

If you have already identified as a student with a documented disability and are entitled to classroom or testing accommodations, please inform the instructor of the accommodations you will require for this class at the beginning of the course.

Academic Resource Center

Additional support and resources may be accessed through the Academic Resource Center (ARC). Support and resources include academic counseling, accommodations, assistive technology, peer tutoring, plagiarism prevention, testing center services, and writing coaching. Visit www.webster.edu/arc (http://www.webster.edu/arc) or Loretto Hall 40 on the main campus for more information.

Student Success Portal

Webster University's Student Success Portal, powered by Starfish, is a communications tool to connect students with faculty members and campus support services. It allows faculty and staff members to communicate with you regarding academic achievements as well as areas where support may be helpful. You may use the portal to contact faculty and staff members for assistance and to arrange meetings. Activity in the portal will be communicated to your Webster University email account. The Student Success Portal is available via your course home page in WorldClassRoom or via Connections. Learn more about the Student Success Portal at http://www.webster.edu/success/students.html (http://www.webster.edu/success/students.html).

University Library

Webster University Library is dedicated to supporting the research needs and intellectual pursuits of students throughout the University's worldwide network. Resources include print and electronic books, journal articles, online databases, DVDs and streaming video, CDs and streaming music, datasets, and other specialized information. Services include providing materials at no cost and research help for basic questions to in-depth exploration of resources. The gateway to all of these resources and services is http://library.webster.edu (http://library.webster.edu/). For support navigating the library's resources, see http://libanswers.webster.edu/ (http://libanswers.webster.edu/) for the many ways to contact library staff.

Drops and Withdrawals

Drop and withdrawal policies dictate processes for students who wish to unenroll from a course. Students must take proactive steps to unenroll; informing the instructor is not sufficient, nor is failing to attend. In the early days of the term or semester, students may DROP a course with no notation on their student record. After the DROP deadline, students may WITHDRAW from a course; in the case of a WITHDRAW, a grade of W appears on the student record. After the WITHDRAW deadline, students may not unenroll from a course. Policies and a calendar of deadlines for DROP and WITHDRAW are at:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/enrollment.html
(http://www.webster.edu/catalog/current/undergraduate-catalog/enrollment.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/enrollment.html (http://www.webster.edu/catalog/current/graduate-catalog/enrollment.html)

Academic Calendar - http://www.webster.edu/academics/academic-calendar/ (http://www.webster.edu/academics/academic-calendar/)

Current tuition rates, policies, and procedures, including details of pro-rated tuition refunds, are available in the "Tuition, Fees, and Refunds" section of Webster's Academic Catalogs:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/tuition.html (http://www.webster.edu/catalog/current/undergraduate-catalog/tuition.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/tuition.html (http://www.webster.edu/catalog/current/graduate-catalog/tuition.html)

Student Handbook and Other Important Policies

Student handbook and other non-academic policies may apply to you and may impact your experience in this class. Such policies include the student code of conduct, privacy, technology and communications, and more. Please review the handbook each year and be aware of policies that apply to you. The handbook is available at:

http://www.webster.edu/student-handbook/ (http://www.webster.edu/student-handbook/)

Sexual Assault, Harassment, and Other Sexual Offenses

Webster University makes every effort to educate the community to prevent sexual assault, harassment, and other sexual offenses from occurring, and is committed to providing support to those affected when this behavior does occur. To access information and resources or to review the Policy on Sexual Assault, Harassment, and Other Sexual Offenses, visit:

http://www.webster.edu/sexual-misconduct/ (http://www.webster.edu/sexual-misconduct/)

Research on Human Subjects

The Webster University Institutional Review Committee (IRB) is responsible for the review of all research on human subjects. The IRB process applies to all Webster University faculty, staff, and students and must be completed prior to any contact with human subjects. For more information on the IRB, visit:

http://www.webster.edu/irb/index.html (http://www.webster.edu/irb/index.html)

Course Evaluations

At the end of this course, you will have the opportunity to provide feedback about your experience. Your input is extremely valuable to the university, your instructor, and the department that offers this course. Please provide your honest and thoughtful evaluation, as it helps the university to provide the best experience possible for all of its students.

Important Technology Information

Connections Accounts

Webster University provides all students, faculty, and staff with a University email account through Connections. Students are expected to activate their Connections account and regularly check incoming University email. Students may choose to have their University email forwarded to an alternate email address. Connections account holders can call the Help Desk (314-246-5995 or toll free at 1-866-435-7270) for assistance with this setup. Instructions are also provided on the Information Technology website at:

http://www.webster.edu/technology/service-desk/ (http://www.webster.edu/technology/service-desk/)

WorldClassRoom

WorldClassRoom is Webster's Learning Content Management System (LMS). Your instructor may use WorldClassRoom to deliver important information, to hold class activities, to communicate grades and feedback, and more. WorldClassRoom is available using your Connections ID at:

https://worldclassroom.webster.edu/ (https://worldclassroom.webster.edu/)

Webster Alerts

Webster Alerts is the University's preferred emergency mass notification service, available free to current students, faculty and staff at all US campuses. By registering a valid cell phone number and email address, you will receive urgent campus text, voice mail and email communications. Valuable information concerning a range of incidents affecting you - from weather-related campus closures, class delays and cancellations, to more serious or life-threatening events - are immediately and simultaneously delivered through multiple communication channels. To register for Webster Alerts, visit:

http://www.webster.edu/technology/services/webster-alerts/ (http://www.webster.edu/technology/services/webster-alerts/)

🌐 Campus Information

Due to the Education Centers not re-opening in the DC region for this term _**please**_ meet via Zoom for the Spring 1 term.

Instructors will post the meetings in WorldClassroom/Canvas for students to log in each week (added security measure). On the left side with all the hyperlinks there will be one for Zoom.

We recommend Chrome for the browser and please mute yourself when not speaking, also only you are able to unmute yourselves in Zoom. If there are many participants it also might be wise to disengage video too (or if bad weather) if low band width messages continually appear.

⊞ Additional Items

Emerson Library: library.webster.edu

There is a live chat feature - home page, contact a librarian (middle of page, middle box): Chat with a librarian on left side (might have to scroll down a bit) - accessible 24 hours a day.

The WSBT subject librarian is:

Business & Management		Mary Anne Erwin	800-985-4279	maerwin@webster.edu

Please use these excellent resources