Computer Science 340 – Cybersecurity Skills Syllabus

Catalog listing: CMSC 340
Course Level: Undergraduate
Prerequisites: CMSC 210 (or CMSC 191) – Computer and Programming (Python)
Instructor: Dr. Robert Dahlberg
Office: Engineering East E2242
Phone: (630) 215-8124 (cell)
email: dahlbergra@vcu.edu
Classroom: Virtual - Online
Class website: Canvas
Office Hours: ***In person:*** by Appointment request only
       Virtual by appointments: Contact instructor via email to schedule a time to meet via Zoom {or other preferred method, i.e. phone or in person.)

       All communication by eMail to the instructor should include **CMCS 340** in the subject line for quicker response.

1.0 – Overview (Catalog Course Description):

Semester course; 3 lecture hours (delivered online). 3 credits. **Prerequisite:** CMSC 210 (or CMSC 191) _Computer and Programming_. The course introduces students to cybersecurity terminology, standards and best practices. Students will apply these practices as part of a cybersecurity-focused project. This course is not applicable for credit toward the B.S. in Computer Science.

a. – Course Goals

Upon successful completion of the course, the student will be able to:
- b. Students should be comfortable using cybersecurity terminology in discussions with cybersecurity professionals
- c. Students will have the ability to execute and discuss Risk Management processes
- d. By end of the course, students should be able to discuss the 10 major domains of knowledge in Cybersecurity
- e. Students should be able to work with security technologist and help them develop reports
- f. By end of the course, students should be able to organize and track vulnerabilities
- g. Explain the need, the role and purpose of information security in an organization

2.0 – Major Topics Covered:
- Introduction to Information Security
- The Need for Security
- Legal, Ethical, and Profession Issues in Information Security
- Planning for Security
- Risk Management
- Security Technology : Access Controls, Firewalls, and VPNs
- Security Technology: Intrusion Detection and Prevention Systems, and Other Security Tools
- Cryptography
- Physical Security

- Implementing Information Security
- Security and Personnel
- Information Security Maintenance

3.0 – Textbook:

Required Text:

Title:	MindTap Information Security, 1 term (6 months) Instant Access for *Principles of Information Security, 6th Edition*
Author:	Michael E. Whitman; Herbert J. Mattord
Publisher:	Pearson
Year	2019
ISBN-10:	1-337-28164-6
ISBN-13:	978-1-337-28164-5

4.0 – Evaluation:

General Instructions:

1. All projects and programming assignments must be uploaded to Canvas on or before the due date specified. Only files submitted to Canvas on or before the due date will be considered for grading. Requests to re-grade projects must be made with two weeks from the date the project grade is posted in Canvas, requests after this time will be denied.
2. No assignments will be accepted late unless special permission has been given prior to the due date.
3. No makeup assessments will be given unless special permission has been given prior to the date of the assessment. Request to adjust scores or re-grade assessments must be made the week in which the assessment is returned, requests after this time will be denied.
4. All programs are to be individual efforts. This does not preclude the discussion of techniques to be used or ideas for algorithms. In addition, it is permissible to help each other find syntax errors or minor logic errors. However, the actual correction of such errors is up to the author of the program. Programs will be run through a plagiarism detection program to ensure individual effort.
5. Do your own work. **Plagiarism applies to source code as with any other intellectual property. Plagiarized code is a form of cheating and will be treated as such.**

Grading:

Category	Weight Percentage
Discussion	25
Cybersecurity Skills Activities	25
Quizzes	50

Grading scheme:

A: >= 90%
B: >= 80% and < 90%

C: >= 70% and < 80%
D: >= 60% and < 70%
F: < 60%

Technology Support
Engineering & VCU Resources:
- **Personal Computer Requirement**: For our current system requirements and recommendations, see: https://egr.vcu.edu/admissions/accepted/computer-recommendations/
- **Remote Access to Public Lab computers**: To provide remote access, we use the Citrix App2Go environment to provide full and exclusive control over "the next available" computer in the lab. See this link for more details: https://wiki.vcu.edu/x/Oa0tBg
- **VCU provides a lot of software available for students to download to their personal computers.** For a list of software and the specifics for each, see: https://ts.vcu.edu/software-center/. In particular, Microsoft Office is available free to students.
- **VCU is transitioning to Canvas.** See the Canvas Student Guide at this link: https://community.canvaslms.com/t5/Student-Guide/tkb-p/student
- **For IT help in the College of Engineering**, see our Wikipedia for "student" help at: https://wiki.vcu.edu/display/EGRITHELP
- **VCU's Technology Services (TS) provides support for "central IT" services**. If you have a technical issue with any of the following services, please submit a ticket with VCU Technology Services at https://itsupport.vcu.edu/ or call (804) 828-2227. VCU TS maintains and supports these services and will be able to provide assistance to you.
  - VCU Cisco VPN
  - 2Factor or Dual Authentication (DUO)
  - Blackboard/Canvas
  - Gmail or other Google Apps
  - Zoom videoconferencing
  - VCU App2Go (Application server)
  - Resetting VCU password
- **For IT issues related to College of Engineering teaching and research, email egrfixit@vcu.edu**
- **For loaner Chromebooks for emergency purposes:** See this link for more details: https://vcutsmpc.getconnect2.com/

Campus emergency information
What to know and do to be prepared for emergencies at VCU:
- Sign up to receive VCU text messaging alerts. Keep your information up-to-date. Within the classroom, the professor will keep his or her phone on to receive any emergency transmissions.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on-campus classrooms.
- Listen for and follow instructions from VCU or other designated authorities. Within the classroom, follow your professor's instructions.
- Know where to go for additional emergency information.

- Know the emergency phone number for the VCU Police (828-1234).
- Report suspicious activities and objects.
- Keep your permanent address and emergency contact information current in eServices.

Class registration required for attendance

Students may attend only those classes for which they have registered. Faculty may not add students to class rosters or Canvas. Therefore, if students are attending a class for which they have not registered, they must stop attending.

Honor System: upholding academic integrity

The VCU Honor System policy describes the responsibilities of students, faculty and administration in upholding academic integrity, while at the same time respecting the rights of individuals to the due process offered by administrative hearings and appeals. According to this policy, "Members of the academic community are required to conduct themselves in accordance with the highest standards of academic honesty, ethics and integrity at all times." In addition, "To support a commitment to the Honor System, all members of the VCU community are required to:
- Adhere to the Honor System policy and its procedures;
- Report any suspicion or knowledge of possible violations of the Honor System;
- Answer truthfully when called upon to do so regarding Honor System matters;
- Maintain appropriate confidentiality regarding related to Honor System matters."

More information can be found at in the [VCU policy library](#).

Important dates

You can view important dates for the semester in the [academic calendar](#).

Discussions

Each week we will be discussing a chapter/topic from the textbooks in the course. Students are expected to contribute to the forum discussions during the particular weeks listed in the Weekly Schedule. Discussion Forums will be monitored through the entire semester. All forum contributions must be written in a business professional fashion, using correct spelling, complete sentences, and appropriate grammar. Forum contributions not following this format will not be graded.

For each forum, students will be required to read other students forums and comment on at least two other forum contributions. These comments are a requirement for full credit for the forum contributions.

"Discussion Forums" is a Web-based conferencing system designed to serve as a discussion environment for students and the instructor to discuss course issues throughout the term. The student will access the forums through the Discussion Board link found on the Home page of the Canvas course. The instructor will be posting topics throughout the term.

Each student is required to participate in the discussions. Points will be given based on effort and meaningful contribution to the discussions throughout the term. Several short responses are

encouraged, but they should be responses that reflect thought and promote further interest in the topic, not just responses for the sake of meeting the participation requirement. You may be the first student to contribute to a theme! Don't be shy. Special recognition will be given to students who really contribute to the conference activity -- those who contribute first to a theme and those who participate regularly.

The instructor is the gatekeeper of the forums. So, the instructor reserves the right to delete any student postings that are considered inappropriate or irrelevant to the discussions. Scholarly discussions are expected for this class discussion activity.

Note that Discussion Forums is an asynchronous system enabling students to participate AT ANY TIME in the discussions. This instructor does not require participation at a specific time. However, to keep the discussions lively and active, students should plan as part of the weekly activity, to check out and perhaps contribute to the on-going themes. Begin dates for forum discussions are listed in the Weekly Schedule. The Discussion Forums works best when everyone participates throughout the term. This is an opportunity for students to get to know one another during the term.

Managing stress

Students may experience situations or challenges that can interfere with learning and interpersonal functioning including stress, anxiety, depression, alcohol and/or other drug use, concern for a friend or family member, loss, sleep difficulties, feeling hopeless or relationship problems. There are numerous campus resources available to students including University Counseling Services (804-828-6200 MPC Campus, 804-828-3964 MCV Campus), University Student Health Services (MPC 804 828-8828, MCV Campus 804 828-9220) and the Wellness Resource Center (804-828-9355). 24 hour emergency mental health support is available by calling 828-1234 and asking to speak to the on-call therapist or utilizing the National Suicide Prevention Lifeline (1-800-784-2433).

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Mandatory responsibility of faculty members to report incidents of sexual misconduct

It is important for students to know that all faculty members are mandated reporters of any incidents of sexual misconduct/violence (e.g., sexual assault, sexual exploitation and partner or relationship violence). This means that faculty cannot keep information about sexual misconduct/violence confidential if you share that information with them and they must report this information immediately to the university's Title IX Coordinator. In addition, department chairs, deans, and other unit administrators are required to report incidents of sex or gender-based discrimination to the university's Title IX Coordinator. Once a report is made, you will receive important information on your reporting options, on campus and off campus resources and remedial measures such as no-contact directives, residence modifications, and academic modifications. If you would prefer to speak with someone confidentially for support and to discuss your options for reporting, contact:

VCU's Wellness Resource Center
        804.828.9355 | myoptions@vcu.edu | thewell.vcu.edu
Greater Richmond Regional Hotline (Community program)
        804.612.6126 | 24-hour hotline
VCU's Counseling Services   804-828-6200

For more information on how to help, please click here. The Policy on Sexual Misconduct/Violence and Sex/Gender Discrimination, can be found in the VCU policy library. For more information about the University's Title IX process, please visit equity.vcu.edu.

Military short-term training or deployment

If military students receive orders for short-term training or for deployment/mobilization, they should inform and present their orders to Military Student Services and to their professor(s). For further information on policies and procedures contact Military Student Services at 828-5993 or access the corresponding policies.

Student conduct in the classroom

According to the Faculty Guide to Student Conduct in Instructional Settings, "The university is a community of learners. Students, as well as faculty, have a responsibility for creating and maintaining an environment that supports effective instruction. In order for faculty members (including graduate teaching assistants) to provide and students to receive effective instruction in classrooms, laboratories, studios, online courses, and other learning areas, the university expects students to conduct themselves in an orderly and cooperative manner." This applies to the virtual classroom as well and discussions will be monitored for appropriate conduct. The Student Code of Conduct also prohibits the possession of or carrying of any weapon. For more information see http://register.dls.virginia.gov/details.aspx?id=3436.

Student email policy

Email is considered an official method for communication at VCU because it delivers information in a convenient, timely, cost-effective, and environmentally aware manner. Students are expected to check their official VCU email on a frequent and consistent basis in order to remain informed of university-related communications. The university recommends checking email daily. Students are

responsible for the consequences of not reading, in a timely fashion, university-related communications sent to their official VCU student email account. This policy ensures that all students have access to this important form of communication. It ensures students can be reached through a standardized channel by faculty and other staff of the university as needed. Mail sent to the VCU email address may include notification of university-related actions, including disciplinary action. Please read the policy in its entirety at the [VCU Policy Library](#).

Student financial responsibility

Students assume the responsibility of full payment of tuition and fees generated from their registration and all charges for housing and dining services, and other applicable miscellaneous charges. Students are ultimately responsible for any unpaid balance on their account as a result of the University Financial Aid Office or their third party sponsor canceling or reducing their award(s).

Students representing the university – excused absences

Students who represent the university (athletes and others) do not choose their schedules. Student athletes are required to attend games and/or meets. All student athletes should provide their schedules to their instructors at the beginning of the semester. The Intercollegiate Athletic Council strongly encourages faculty to treat missed classes or exams (because of a scheduling conflict) as excused absences and urges faculty to work with the students to make up the work or exam.

Students with disabilities

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, as amended, require that VCU provide "academic adjustments" or "reasonable accommodations" to any student who has a physical or mental impairment that substantially limits a major life activity. To receive accommodations, students must register with the Office of Student Accessibility and Educational Opportunity on the Monroe Park Campus (828-2253) or the Division for Academic Success on the MCV campus (828-9782). Please also visit the [Student Accessibility and Educational Opportunity website](#) and/or the [Division for Academic Success website](#) for additional information.

Once students have completed the registration process, they should schedule a meeting with their instructor (s) and provide their instructor (s) with an official accommodation letter. Accommodation letters will outline the required classroom accommodations. Additionally, if coursework requires the student to work in a lab environment, the student should advise the instructor or a department chairperson of any concerns that the student may have regarding safety issues related to a disability. Students should follow this procedure for all courses in the academic semester.

Withdrawal from classes

Before withdrawing from classes, students should consult their instructor as well as other appropriate university offices. Withdrawing from classes may negatively impact a student's financial aid award and his or her semester charges. To discuss financial aid and the student bill, visit the [Student Services Center](#) at 1015 Floyd Avenue (Harris Hall) and/or contact your financial aid counselor regarding the impact on your financial aid.

Faculty communication about students

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VCU instructional faculty, administrators and staff maintain confidentiality of student records and disclose information in accordance with the Family Educational Rights and Privacy Act (FERPA). This means that VCU officials may disclose student record information without the consent of the student in certain situations. To support university operations, for example, VCU officials share information about students with other educational officials as necessary to perform their job duties. FERPA permits this disclosure to school officials who have a legitimate educational interest in the student information. In addition, VCU officials have obligations to report information shared by a student depending on the content of that information, for example, in compliance with VCU's policy on the duty to report (policy.vcu.edu). Unless FERPA permits a certain disclosure, VCU generally requires consent from a student to disclose information from their education record to another individual. You may find additional information on the VCU FERPA website: http://rar.vcu.edu/records/family-educational-rights-and-privacy-act/.