Cybersecurity Fundamentals
Spring 2026

Class (Time and Location)
<u>Time:</u> Wednesday 12:00 PM - 1:15 PM **OR** 6:00pm - 7:15pm
<u>Location:</u> Google Meets (Link is in Canvas)

Instructors
LaKysha Patnode
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Office Hours
By appointment.

Course Description
In this course, students will learn the foundational concepts of cybersecurity. The course will cover system and data security principles. Students will explore the organizational, societal, and global implications of cybersecurity with a focus on ethics, risk management, and adversarial analysis.

Course Objectives
Upon completion of this course students will be able to:
1. Describe ways in which cybersecurity is global, transcending traditional boundaries, and is always evolving
2. In a lab setting, interpret the principles of data security as the use of non-technical and technical controls to protect the confidentiality, integrity, and availability of data that is being processed, transmitted and stored
3. In a lab setting, Interpret the principles of systems security as the protection of hardware and software systems from weaknesses in a system's design, implementation, or operation and management that could be exploited to violate the system's security policy
4. Explain how cybersecurity risk is emergent, complex, and weighs the priorities and resources of an entity against the potential damage and likelihood of loss
5. Use real-world examples to show that cybersecurity exists within a context of social, organizational, and personal values causing tensions between what the ethical duties are and whose interests should be invested in protecting

Textbook(s)
Various sources will be used and are available through links in the Canvas modules.

Prerequisite(s)
None.

Instructional Approach
This course is comprised of the following instructional approaches:

Assignments
Homework should be turned in on the due dates without any delay. Assignments will be from chapters covered before the week of the homework.

Class Activities
Students are encouraged to actively participate in the course classwork and lab exercises. Classwork and labs will be from recently covered material.

Engagement
The engagement grade consists of attendance and participation during class and online discussions. It is important for the learning environment that students come to class prepared to engage with the material, other students, and instructors.

Quizzes
There will be 3 Quizzes throughout the course. Quizzes will consist of multiple choice and short answer questions.

Final Project
Each group/student will prepare a short paper (not more than 8 pages) using APA format. The paper will cover research conducted on an Advanced Persistent Threat (APT). In addition, a short presentation will be recorded and submitted to explain the APT and their typical attack methods. The paper will be for a technical audience, while the presentation should be geared towards business stakeholders. Research will be done in weeks prior.

Grading

Grades will be awarded in accordance with the Champlain College Grading System for undergraduate students.

Final grades will be determined based on the following components:

Category	Weight
Assignments	40%
Class Activities	25%
Quizzes	10%
Engagement	10%
Final Project	15%
Total	100%

Late Submissions
- Don't be late
- 20% is subtracted automatically, no follow on deductions but…
    - Class assignments due before week 7 will not be graded after the start of week 7.
    - Class assignments due after week 7 will not be graded after May 1st.
- If you are going to be late on an assignment, let me know ahead of time. After the fact notification is not acceptable except in extreme cases.

Late Policy Exceptions
Everyone has a bad week. Limited extensions are granted when asked for prior to the assignment due date. Don't trust the instructor's memory. Make sure you get it in writing (return email, CANVAS comment). Examples of valid excuses include:
- Proxmox broke your VM
- The DataCenter caught on fire
- Global Internet Outage
- You are actively working with me after hours and during office hours on difficulties you are having with the assignment and doing so well before the deadline. (No communication, no extension)
- I have a job interview with XYZ in LA over the weekend, can I have 1 more day?
- **Note:** Repeat extension requests will likely not be granted.

Grading Policy

Keep track of all your grades. It is your responsibility to make sure they are correct and to make the instructor aware of any error in the grade book. All questions regarding any graded work must be brought to the attention of your professor within one week of when the work was returned.

Grades will be awarded in accordance with the Champlain College Grading System for undergraduate students. The College's standard numerical scale for calculating final grades is as follows:

A = 93+, A- = 90-92, B+ = 87-89, B = 83-86, B- = 80-82, C+ = 77-79, C = 73-76, C- = 70-72, D+ = 67-69, D = 63-66, D- = 60-62, F = Below 60

Final Grade Breakdown can be viewed in Canvas and is subject to change without notification.

Grades and weighting are accurate in Canvas with the exception that I will round up final grades to the nearest whole number % in the case where just 5/10 of a point would get you to the next letter grade. I do not curve. Please refer to assignment rubrics for how I intend to assess your work.

Attendance Policy

You are expected to come to every class. Classes start on time, so please be ready to go. There is no slack time in the semester and my courses typically take a building block approach where one week's activities build upon the foundations laid the previous weeks.

Unexcused absences for more than two weeks of classes will result in an automatic 'F'. Specifically, this would mean missing more than 4 classes for a course that meets twice weekly or two classes for a course that meets once weekly.

If illness, accident or similar circumstances make it impossible to attend a class, please let me know before class and you are still responsible for covering the material and making up the work prior to the next class. Waiting until the next class to find out what was covered will not work. You are responsible for obtaining and completing the assignment. The information and content will be available on Canvas and you can contact me with anything you need help with.

Attendance is normally taken at the start of every class. If you miss a good deal of the class lecture, lab or project time, are habitually late (I will warn you), or if I neglect to record your late arrival, you will be marked absent for that day. If your attendance issues adversely affect a team project, you will likely receive a substantially reduced

score from your peers due to poor teamwork and/or effort. You may also be pulled from a team and be graded individually.

Classroom Expectations

Students are expected to conduct themselves in a manner that helps create a safe and comfortable learning environment for all. Please pay special attention to the expectations below and let me know immediately if you have any questions and/or concerns.

'Hacking'

Please do not attempt to show off your skills in the classroom to 'hack' someone's computer and/or cause some type of disruption to their computer. This is a classroom for others to learn and their assigned computer is for their work only. Interfering with someone else's computer system will not be tolerated because you are likely to interfere with their academic performance. Consequences could range from a zero on assignments, excused from class, and/or receiving an F for the course.

Behavior

While personal expression and individual contribution are two of the most valuable resources we share in the classroom, there are certain behaviors that are not acceptable under any circumstances.

- Derogatory statements about an individual or group of people based on social, gender identity, racial, political, socio economic class or personal characteristics of that individual or group will not be tolerated.
- Personal attacks (Ad hominem) on people in (or outside) the classroom will not be tolerated. While differences of opinion are encouraged, "calling out" people or attacking them personally, rather than engaging in informed discussions or critical thinking about ideas, is unacceptable.
- Ridiculing or laughing at others when they have questions or need assistance will not be tolerated. Remember, there are no stupid questions in life, only unanswered ones!
- Foul language has no place in the classroom and detracts from the learning experience. Cursing is not allowed.

Participation

Active participation in this course is particularly important given the multidisciplinary nature of the subject matter and the multidisciplinary makeup of the students in the class. Participation is not solely scored on contribution to class discussions and asking questions class (although that is strongly encouraged). Attendance, attentiveness

during class discussions, lectures and labs, and fostering an environment conducive to academic inquiry and learning are key.

In addition, short and simple quizzes on the assigned reading will be conducted at the start of class. These assessments are an additional incentive for students to complete reading prior to the lecture. Students that are late for class will not be able to make up the assessment.

Interfering with other colleague's performance
This is a classroom for others to learn and their assigned computer is for their work only. Interfering with someone else's computer system will not be tolerated because you are likely to interfere with their academic performance. Consequences could range from a zero on assignments or excused from class. Repeated problems may result in receiving an 'F' for the course.

Egos and Learning
Everything we know, we didn't know before. Everyone doesn't have the same experiences and exposure to information or training opportunities. Keep this in mind when someone asks a question that YOU feel is stupid or ANYONE should know. Ridiculing or laughing at someone due to questions they ask don't create a comfortable learning environment. Consequences will result in a zero on assignments for the class period and/or dismissal from class.

If you have problems with your lab, I will start troubleshooting starting with the fundamental questions. If you get agitated due to these kinds of questions, ensure you have covered the basics before asking for assistance. It is very common to overlook a basic step to solving a problem.

Leave your egos outside the classroom. Everyone is on a different level of learning, how they learn, speed at which they learn, and different skill levels.

Share your knowledge and skills with tact. This classroom is supposed to be a safe place to learn.

Inflated egos and disrupting class, showing off your skills, etc. doesn't create a safe/professional learning environment.

Limited Use Of AI Tools

During this class, AI writing tools such as ChatGPT may be allowed in certain specific cases. You will be informed as to when, where, and how these tools are permitted to be used, along with guidance for attribution. Any use outside of these specific cases constitutes a violation of Champlain's Academic Honesty Policy.

Academic Writing Policy

All assignments and written materials submitted in this course will be of academic quality. Submitting work written in informal language and with widespread use of colloquialisms is not considered academic writing. You may use the services of the Writing Center to help you with editing. Writing is especially important in assignments, reports and the final project.

Professor's Note: In this field, your work product is typically a written report or oral testimony. The quality of these products reflects on your technical capabilities and credibility.

Please see the Writing Center for help with your writing. The Champlain Writing Center is a free service for students, faculty and staff working on any writing project, ranging from academic essays, to creative writing to public writing.

Contact Information: champlainwritingcenter@gmail.com or 802-383-6672

Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as a faculty member. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. If you come to me with non-course-related concerns, I will seek to keep the information you share private to the greatest extent possible. However, please understand that **I am legally required to share with designated Champlain College offices information regarding sexual misconduct such as sexual assault, sexual exploitation, partner or relationship violence, or threatening to harm yourself or others. I also have to report statements made about physical harm to yourself or others.**

Students can always access confidential support by contacting Counseling and Accommodation Services. The Director, Skip Harris, can be reached at 802-651- 5961 or sharris@champlain.edu, and his office is in Skiff Hall.

Academic Honesty Policy

Introduction
In addition to skills and knowledge, Champlain College aims to teach students appropriate Ethical and Professional Standards of Conduct. The Academic Honesty Policy exists to inform students and Faculty of their obligations in upholding the highest standards of professional and ethical integrity. All student work is subject to the Academic Honesty Policy. Professional and Academic practice provides guidance about how to properly cite, reference, and attribute the intellectual property of others. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard.

Instructor's Intended Purpose
The student's work must match the instructor's intended purpose for an assignment. While the instructor will establish the intent of an assignment, each student must clarify outstanding questions of that intent for a given assignment.

Unauthorized Assistance
The student may not give or get any unauthorized assistance in the preparation of any work. Authorship. The student must clearly establish authorship of a work. Referenced work must be clearly documented, cited, and attributed, regardless of media or distribution. Even in the case of work licensed as public domain or Copyleft, (See: http://creativecommons.org) the student must provide attribution of that work in order to uphold the standards of intent and authorship.

Declaration
Placing one's name on the exam, assignment, or any course document is a statement of academic honor that the student has not received or given inappropriate assistance in completing it and that the student has complied with the Academic Honesty Policy in that work.

Consequences
An instructor may impose a sanction on the student that varies depending upon the instructor's evaluation of the nature and gravity of the offense. Possible sanctions include but are not limited to, the following: (1) Require the student to redo the assignment; (2) Require the student to complete another assignment; (3) Assign a grade of zero to the assignment; (4) Assign a final grade of "F" for the course. A student may appeal these decisions according to the Academic Grievance Procedure. (See the relevant section in the Student Handbook.) Multiple violations of this policy will result in a referral to the Conduct Review Board for possible additional sanctions.

The full text of the Academic Honesty Policy is in the College Catalog.

The Student Success Center is here to help you!

- Academic Coaching (second floor, MIC) - One-to-one appointments with a professional coach to help you build your skills and stay on track. Make an appointment at trac.champlain.edu
- Peer Tutoring Centers - Let your peers give you a hand! Check our website or Student Central for our schedule.
  - Programming (MIC 203)
  - Mathematics (MIC 207)
  - Writing (MIC 208)
  - Cybersecurity (Joyce 310)
  - Computer and Digital Forensics (Ireland 117)
  - Game Design (CCM 224)
  - Game Production (CCM 201)
  - Game Art (CCM 232)

Check our website or our shared Google Drive for more resources and information on Group Coaching, Studio Sessions, and Interactive Workshops.

Topic Outline

Week 1 - Jan 21st	What is Cybersecurity?
Week 2 - Jan 28th	Intro to VMs/Intro to Kali
Week 3 - Feb 4th	Risk, Adversity, and Threats
Week 4 - Feb 11th	Human Factors in Cyber / Bias
Week 5 - Feb 18th	Data Security
Week 6 - Feb 25th	System Security
Week 7 - Mar 4th	Cryptography Basics
Week 8 - Mar 11th	**NO CLASS - Spring Break**
Week 9 - Mar 18th	Hashing & Modern Ciphers
Week 10 - Apr 1st	Networking Basics
Week 11 - Apr 8th	Network Security

Week 12 - Apr 15th	Web Fundamentals
Week 13 - Apr 22nd	Web Security
Week 14 - Apr 29th	Digital Investigations - Part 1
Week 15 - May 6th	NO CLASS - Quiz 3 and Final Project Due

Please note: This document is subject to change.