



## COURSE OUTLINE: CSD227 - COMPUTER SECURITY

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Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	CSD227: COMPUTER SECURITY, PRIVACY, AND ETHICS
<b>Program Number: Name</b>	2095: COMPUTER PROGRAMMING
<b>Department:</b>	COMPUTER STUDIES
<b>Academic Year:</b>	2022-2023
<b>Course Description:</b>	<p>This course focuses on high-level computer security and privacy concepts. Topics include cryptography, encryption, hashing, security best practices, application and software security, security governance, as well as the area of ethics.</p> <p>Students will explore how these concepts impact the technology sector and will examine real world computer security problems.</p>
<b>Total Credits:</b>	4
<b>Hours/Week:</b>	4
<b>Total Hours:</b>	56
<b>Prerequisites:</b>	CSD123, CSD213
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<p><b>2095 - COMPUTER PROGRAMMING</b></p> <p>VLO 3 Implement and maintain secure computing environments.</p> <p>VLO 8 Adhere to ethical, legal, and regulatory requirements and/or principles in the development and management of computing solutions and systems.</p>
<b>Please refer to program web page for a complete listing of program outcomes where applicable.</b>	
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p>
<b>Course Evaluation:</b>	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>A+ = 90-100%</p> <p>A = 80-89%</p>



B = 70-79%  
 C = 60-69%  
 D = 50-59%  
 F < 50%

Students are expected to be present to write all tests in class. If a student is unable to write a test due to illness or a legitimate emergency, that student must contact the professor prior to class and provide reasoning, which is acceptable to the professor. Should the student fail to contact the professor, the student shall receive a grade of zero on the test.

Once the test has commenced, the student is considered absent and will not be given the privilege of writing the test.

Students caught cheating during a test will receive an automatic zero. Please refer to the College Academic Dishonesty Policy for further information.

In order to qualify to write a missed test, the student shall have:

- a) attended at least 80% of the classes.
- b) provided the professor an acceptable explanation for his/her absence.
- c) been granted permission by the professor.

NOTE: The missed test that has met the criteria above will be an end-of-semester test.

Labs and Assignments are due on the due-date indicated by the Professor. Notice by the professor will be written on the lab or verbally announced in the class and / or both. No late labs will be accepted beyond the due date. Once labs / assignments have been marked by the professor and returned to the student, no new labs / assignments will be accepted. It is the responsibility of the student who has missed a class to contact the professor immediately to obtain the lab / assignment. Students are responsible for doing their own work. Labs / assignments that are handed in and are deemed identical in content and personal wording to others may constitute academic dishonesty and result in a zero grade.

The total overall average of test scores combined must be 50% or higher in order to qualify to pass this course. In addition, combined tests, Labs / Assignments total grade must be 50% or higher.

**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
1. Computer Security	1.1 Understand social engineering and the role it plays in digital security 1.2 Understand the issues faced in today`s world with computer security 1.3 Learn techniques used to attack and defend computers 1.4 Understand how applications must be secure on the Internet 1.5 Review the most common techniques to break computer security 1.6 Review common passwords and password generation
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Cryptography	2.1 Understand cryptography 2.2 Differentiate between encryption and hashing 2.3 Understand public keys and the difference between symmetric and asymmetric encryption



	<p>2.4 Examine different encryption techniques and compare</p> <p>2.5 Examine different hashing techniques and compare</p> <p>2.6 Apply encryption and hashing knowledge to real applications</p> <p>2.7 Understand how hashing tables work and their applications</p>
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Risk	<p>3.1 Identify threats, vulnerabilities, and risk</p> <p>3.2 Understand threat monitoring, vulnerability assessment, and risk management</p> <p>3.3 Create risk matrices and describe risk with computer applications</p> <p>3.4 Understand disaster recovery and business continuity</p>
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
4. Privacy	<p>4.1 Understand the difference between privacy and anonymity</p> <p>4.2 Explain the difference between staying secure, staying private, and staying anonymous</p> <p>4.3 Understand biometrics and how it is used and calculated for computer security</p> <p>4.4 Understand access control</p> <p>4.5 Explain how logging can help with security but also increase privacy concerns</p> <p>4.6 Review real world privacy breaches and their impact on the world around us</p> <p>4.7 Review real world Terms of Service and agreements which are signed by billions of people</p>
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
5. Ethics	<p>5.1 Understand what a white hat, black hat, and grey hat hacker is and the difference</p> <p>5.2 Explain how ethical decisions are made all the time with computer programming</p> <p>5.3 Examine real world ethical dilemmas with computer security</p> <p>5.4 Identify methods to collect information and understand how to collect just enough</p>

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Assignments	30%
Final Exam	30%
Midterm	20%
Research Paper/Presentation	20%

**Date:**

June 3, 2022

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

