

# COURSE SYLLABUS



COURSE TITLE:	Workstation Security+
CLASS SECTION:	CSNT-111-X01
TERM:	Winter 2023
COURSE CREDITS:	3
DELIVERY METHOD(S):	in person

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.  
Learn more about Camosun's

---

The COVID-19 pandemic has presented many challenges, and Camosun College is committed to helping you safely complete your education. Following guidelines from the Provincial Health Officer, WorkSafe BC, and the B.C. Government to ensure the health and wellbeing of students and employees, Camosun College is providing you with every possible protection to keep you safe. Our measures include COVID Training for students and employees, health checks, infection control protocols including sanitization of spaces, PPE and ensuring physical distancing. For details on these precautions please follow this link: <http://camosun.ca/covid19/faq/covid-faqs-students.html>. However, if you're at all uncomfortable being on campus, please share your concerns with your Instructor. If needed, alternatives will be discussed.

---

*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

---

NAME:	Ian Cameron
EMAIL:	cameron@camosun.ca
OFFICE:	TEC 211
HOURS:	TBA

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

---

This course introduces students to the concepts and procedures used to secure PCs and related network equipment. The students will gain the knowledge and skills required to evaluate and assess security vulnerabilities within enterprise environments. Students will learn to respond to security events and implement appropriate solutions depending on the nature and state of the systems.

PREREQUISITE(S): CSNT110, CSNT120, CSNT130

CO-REQUISITE(S):

EXCLUSION(S):

## COURSE LEARNING OUTCOMES / OBJECTIVES

---

Compare security roles and security controls  
Explain threat actors and threat intelligence  
Perform security assessments and identify social engineering attacks and malware types  
Summarize basic cryptographic concepts and implement public key infrastructure  
Implement authentication controls  
Implement identity and account management controls  
Implement secure network designs, network security appliances, and secure network protocols  
Implement host, embedded/Internet of Things, and mobile security solutions  
Implement secure cloud solutions  
Explain data privacy and protection concepts  
Perform incident response and digital forensics  
Summarize risk management concepts and implement cybersecurity resilience  
Explain physical security

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

---

No printed text required

Access to CompTIA Security + Online Content

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

---

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

### **Week 1 – Introduction – Lessons 1&2**

- **Security Overview**
- **Accessing the Course Material**

### **Lesson 1: Comparing Security Roles and Security Controls**

- **Topic 1A: Compare and Contrast Information Security Roles**
- **Topic 1B: Compare and Contrast Security Control and Framework Types**

### **Lesson 2: Explaining Threat Actors and Threat Intelligence**

- **Topic 2A: Explain Threat Actor Types and Attack Vectors**
- **Topic 2B: Explain Threat Intelligence Sources**

## **LABS**

- **Lab - Introduction / Lab Prep**
- **Exploring the Lab Environment (Lab 01)**

## **Week 2 – Lesson 3 & 4**

### **Lesson 3: Performing Security Assessments**

- **Topic 3A: Assess Organizational Security with Network Reconnaissance Tools**
- **Topic 3B: Explain Security Concerns with General Vulnerability Types**
- **Topic 3C: Summarize Vulnerability Scanning Techniques**
- **Topic 3D: Explain Penetration Testing Concepts**

## **LABS**

- **Scanning and Identifying Network Nodes (Lab 02)**
- **Intercepting and Interpreting Network Traffic Packet Sniffing Tools (Lab 03)**
- **Analyzing the Results of a Credentialed Vulnerability Scan (Lab 04)**

### **Lesson 4: Identifying Social Engineering and Malware**

- **Topic 4A: Compare and Contrast Social Engineering Techniques**
- **Topic 4B: Analyze Indicators of Malware-Based Attacks**

## **LABS**

- **Installing, Using, and Blocking a Malware-based Backdoor (Lab 05)**

## **Week 3 – Lesson 5 & 6**

### **Lesson 5: Summarizing Basic Cryptographic Concepts**

- **Topic 5A: Compare and Contrast Cryptographic Ciphers**
- **Topic 5B: Summarize Cryptographic Modes of Operation**
- **Topic 5C: Summarize Cryptographic Use Cases and Weaknesses**
- **Topic 5D: Summarize Other Cryptographic Technologies**

### **Lesson 6: Implementing Public Key Infrastructure**

- **Topic 6A: Implement Certificates and Certificate Authorities**
- **Topic 6B: Implement PKI Management**

## **LABS**

- **Managing the Lifecycle of a Certificate (Lab 07)**
- **Managing Certificates with Open SSL (Lab 08)**

## **Applied - Performing Network Reconnaissance and Vulnerability Scanning (Lab 06)**

## **Week 4 – Lesson 7**

### **Lesson 7: Implementing Authentication Controls**

- **Topic 7A: Summarize Authentication Design Concepts**
- **Topic 7B: Implement Knowledge-Based Authentication**
- **Topic 7C: Implement Authentication Technologies**
- **Topic 7D: Summarize Biometrics Authentication Concepts**

### **LABS**

- **Auditing Passwords with a Password Cracking Utility (Lab 09)**
- **Managing Centralized Authentication (Lab 10)**

## **Week 5 – Lesson 8**

### **Lesson 8: Implementing Identity and Account Management Controls**

- **Topic 8A: Implement Identity and Account Types**
- **Topic 8B: Implement Account Policies**
- **Topic 8C: Implement Authorization Solutions**
- **Topic 8D: Explain the Importance of Personnel Policies**

### **LABS**

- **Managing Access Controls in Windows Server (Lab 11)**
- **Configuring a System for Auditing Policies (Lab 12)**
- **Managing Access Controls in Linux (Lab 13)**

## **Week 6 – Lesson 9**

### **Lesson 9: Implementing Secure Network Designs**

- **Topic 9A: Implement Secure Network Designs**
- **Topic 9B: Implement Secure Switching and Routing**
- **Topic 9C: Implement Secure Wireless Infrastructure**
- **Topic 9D: Implement Load Balancers**

### **LABS**

- **Implementing a Secure Network Design (Lab 15)**

### **Applied - Configuring Identity and Access Management Controls (Lab 14)**

## **Week 7 – READING BREAK – No Scheduled Classes**

## **Week 8 – Lessons 10 & 11**

### **Lesson 10: Implementing Network Security Appliances**

- **Topic 10A: Implement Firewalls and Proxy Servers**
- **Topic 10B: Implement Network Security Monitoring**
- **Topic 10C: Summarize the Use of SIEM**

## **Lesson 11: Implementing Secure Network Protocols**

- **Topic 11A: Implement Secure Network Operations Protocols**
- **Topic 11B: Implement Secure Application Protocols**
- **Topic 11C: Implement Secure Remote Access Protocols**

### **LABS**

- **Configuring a Firewall (Lab 16)**
- **Configuring an Intrusion Detection System (Lab 17)**
- **Implementing Secure Network Addressing Services (Lab 18)**
- **Implementing a Virtual Private Network (Lab 19)**

## **Week 9 – Lessons 12 & 13**

### **Lesson 12: Implementing Host Security Solutions**

- **Topic 12A: Implement Secure Firmware**
- **Topic 12B: Implement Endpoint Security**
- **Topic 12C: Explain Embedded System Security Implications**

### **Lesson 13: Implementing Secure Mobile Solutions**

- **Topic 13A: Implement Mobile Device Management**
- **Topic 13B: Implement Secure Mobile Device Connections Topic**

### **LABS**

- **Implementing a Secure SSH Server (Lab 20)**
- **Implementing Endpoint Protection (Lab 21)**

## **APPLIED - Securing the Network Infrastructure (Lab 22)**

## **Week 10 – Lesson 14**

### **Lesson 14: Summarizing Secure Application Concepts**

- **Topic 14A: Analyze Indicators of Application Attacks**
- **Topic 14B: Analyze Indicators of Web Application Attacks**
- **Topic 14C: Summarize Secure Coding Practices**
- **Topic 14D: Implement Secure Script Environments**
- **Topic 14E: Summarize Deployment and Automation Concepts**

### **LABS**

- **Identifying Application Attack Indicators (Lab 23)**
- **Identifying a Browser Attack (Lab 24)**
- **Implementing PowerShell Security (Lab 25)**
- **Identifying Malicious Code (Lab 26)**

## **Week 11 – Lessons 15 & 16**

### **Lesson 15: Implementing Secure Cloud Solutions**

- **Topic 15A: Summarize Secure Cloud and Virtualization Services**
- **Topic 15B: Apply Cloud Security Solutions**
- **Topic 15C: Summarize Infrastructure as Code Concepts**

### **Lesson 16: Explaining Data Privacy and Protection Concepts**

- **Topic 16A: Explain Privacy and Data Sensitivity Concepts**
- **Topic 16B: Explain Privacy and Data Protection Controls**

### **LABS**

#### **APPLIED - Identifying Application Attacks (Lab 27)**

## **Week 12 – Lesson 17 & 18**

### **Lesson 17: Performing Incident Response**

- **Topic 17A: Summarize Incident Response Procedures**
- **Topic 17B: Utilize Appropriate Data Sources for Incident Response**
- **Topic 17C: Apply Mitigation Controls**

### **Lesson 18: Explaining Digital Forensics**

- **Topic 18A: Explain Key Aspects of Digital Forensics Documentation**
- **Topic 18B: Explain Key Aspects of Digital Forensics Evidence Acquisition**

### **LABS**

- **Managing Data Sources for Incident Response (Lab 28)**
- **Configuring Mitigation Controls (Lab 29)**
- **Acquiring Digital Forensics Evidence (Lab 30)**

## **Week 13 – Lesson 19 & 20**

### **Lesson 19: Summarizing Risk Management Concepts**

- **Topic 19A: Explain Risk Management Processes and Concepts**
- **Topic 19B: Explain Business Impact Analysis Concepts**

### **Lesson 20: Implementing Cybersecurity Resilience**

- **Topic 20A: Implement Redundancy Strategies**
- **Topic 20B: Implement Backup Strategies**
- **Topic 20C: Implement Cybersecurity Resiliency Strategies**

### **LABS**

- **Backing Up and Restoring Data in Windows and Linux (Lab 31)**

## Week 14 – Lesson 21 & Review

### Lesson 21: Explaining Physical Security

- **Topic 21A: Explain the Importance of Physical Site Security Controls**
- **Topic 21B: Explain the Importance of Physical Host Security Controls**

### LABS

#### APPLIED - Managing incident Response, Mitigation, and Recovery (Lab 32)

#### Exam Prep Review

- **Exam Objectives**
- **Practice Exams**
- **Final Content**
- **Cleanup**

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines scan be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

### EVALUATION OF LEARNING

---

DESCRIPTION	WEIGHTING
Practice Questions	10
Lab Exercises	10
Lab Assessments	10
PBQs	10
Applied Labs	15
Final Exam(s)	45
<b>TOTAL</b>	<b>100%</b>

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.

<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

### COURSE GUIDELINES & EXPECTATIONS

---

The following criteria must be met:

- **Students must obtain a minimum weighted average of 60% in theory evaluations (tests, examinations etc.) in any course that is a pre-requisite for subsequent courses.**
- **Students must obtain a minimum weighted average of 60% in lab evaluations (lab performance, reports, etc.) in any course that is a pre-requisite for subsequent courses.**

- Students must obtain a minimum of 50% on the final examination for a course in order to receive a passing grade.
- Failure to meet any one of these criteria will result in a student receiving a failing grade for the course.
- All assignments (laboratory work, reports, etc.) must be submitted prior to a student writing a final examination. ALL assignments must be submitted in order to qualify to write a final exam.
- Late assignments will have marks deducted; if handed in after assignments are returned to the class, then no mark will be awarded, but the assignment must be submitted.

#### SCHOOL OR DEPARTMENTAL INFORMATION

---

School of Trades and Technology

Electronics and Computer Engineering department

#### STUDENT RESPONSIBILITY

---

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

#### SUPPORTS AND SERVICES FOR STUDENTS

---

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	<a href="http://camosun.ca/advising">http://camosun.ca/advising</a>
Accessible Learning	<a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a>
Counselling	<a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>
Career Services	<a href="http://camosun.ca/coop">http://camosun.ca/coop</a>
Financial Aid and Awards	<a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>
Indigenous Student Support	<a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>
Learning Skills	<a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>

---

Office of Student Support	<a href="http://camosun.ca/oss">http://camosun.ca/oss</a>
Ombudsperson	<a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>
Registration	<a href="http://camosun.ca/registration">http://camosun.ca/registration</a>
Technology Support	<a href="http://camosun.ca/its">http://camosun.ca/its</a>
Writing Centre	<a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>

---

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

---

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

---

### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

**Changes to this syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.