COMP 4108 B (Winter 2026): Computer Systems Security

General Course Information

- **Course Registration Number (CRN):** 11204 (https://central.carleton.ca/prod/bwysched.p_display_course?wsea_code=EXT&term_code=202610&disp=24874222&crn=11204)
- **Classes run:** Jan 5, 2026 to Apr 8, 2026
- **Weekly schedule:** Mondays and Wednesdays, 2:35pm to 3:55pm
- **Room:** Check Carleton Central.
- **Brightspace:** here (https://brightspace.carleton.ca/d2l/home/364872).
- **Instructor:** Prof. AbdelRahman Abdou (abdou at scs.carleton.ca)
- **Office:** HP5130.
- **Office hours:** by appointment.
- **TAs:** Eric Leblanc (ericleblanc at cmail.carleton.ca), and Nareen Khurshid (NareenKhurshid at cmail.carleton.ca)
- **TAs' office hours:** Eric: TBD. Nareen: TBD.
- **No tutorials.**
- **Prerequisite(s):** COMP 3000 (or SYSC 4001) and COMP 2108 (formerly COMP 3109). New and old prerequisites will be accepted, i.e. COMP 2108 or COMP 3109 or COMP 4109. All students must have COMP 3000 or SYSC 4001. Precludes additional credit for CSEC 3108 and SYSC 4810.
- **Material and resources:** Computer Security and the Internet: Tools and Jewels from Malware to Bitcoin (https://people.scs.carleton.ca/~paulv/toolsjewels.html), Second Edition, 2021. Springer. (Textbook by Dr. Paul Van Oorschot). **Students are not required to purchase textbooks or other learning materials for this course.** Book is available for free from the author's website.
- Important dates and deadlines can be found here: Dates, Deadlines, and Regulations—Registrar's Office (https://carleton.ca/registrar/regulations/), including class suspension for fall, winter breaks, and statutory holidays.

Course Summary

Information security in computer and communications systems. Topics include: design principles; operating system security and access control; web and software security; malicious software, security infrastructure; secure email; network authentication; firewalls; intrusion detection; IP security; network attacks; wireless security.

Grading Scheme

The course has the following grading scheme:

- **30%** 5 Assignments (6% each)
- **35%** Midterm 1 (Feb 2, in-class).
- **35%** Midterm 2 (Mar 25, in-class).

Note the following:

- Exams include material noted in class, from assignments, and from extra materials provided.
- Students are expected to attend all classes.
- Assignments are to be submitted via Brightspace or designated site.
- Students need OpenStack accounts if they do not already have one from a previous course. For all questions about the assignments, contact the TAs.
- Late Work Policy: Late assignments receive a penalty of 25% per day, and thus a grade of zero (0) after the 4th day late, unless special permission has been granted in writing.
- Fill out this form to request for consideration of such special permission: academic considerations form (https://carleton.ca/registrar/academic-consideration-coursework-form/).
- You are advised to submit your final work at least one hour prior to the official due date/time, in anticipation of electronic glitches, software or system outages, and connectivity issues.
- Missed Midterm Policy. Students missing a midterm exam receive a grade of 0. If there are exceptional circumstances, a student may ask if they qualify for special consideration using this academic considerations form as soon as practically possible. If approved, alternate evaluation may be used such as a substitute exam, oral exam, or other means of the instructor's choosing.

Course Outline

Week	Date (2026)	Topic
Week 1	Jan 5	Ch.1: Basic Concepts and Principles
	Jan 7	
Week 2	Jan 12	Ch.5: Operating Systems Security and Access Control
	Jan 14	
Week 3	Jan 19	Ch.6: Software Security - Exploits and Privilege Escalation
	Jan 21	
Week 4	Jan 26	Ch.7: Malicious Software
	Jan 28	
Week 5	Feb 2	**Midterm 1**
	Feb 4	Ch.8: Public Key Certificate Management and Use Cases
Week 6	~~Feb 9~~	**(Class cancelled)**
	~~Feb 11~~	
Week 7	~~Feb 16~~	Winterbreak **(No classes)**
	~~Feb 18~~	
Week 8	Feb 23	Ch.8: Public Key Certificate Management and Use Cases
	Feb 25	
Week 9	Mar 2	Ch.9: Web and Browser Security
	Mar 4	

Week 10	Mar 9	
	Mar 11	Ch.10: Firewalls and Tunnels
Week 11	Mar 16	
	Mar 18	Ch.11: Intrusion Detection and Network-based Attacks
Week 12	Mar 23	
	Mar 25	**Midterm 2**
Week 13	Mar 30	
	Apr 1	Ch.12: Wireless LAN Security: 802.11 and Wi-Fi
Week 14	Apr 6	Wrap-up
	~~Apr 8~~	**(No Classes)**

Undergraduate Academic Advisor The Undergraduate Advisors for the School of Computer Science are available in Room 5302HP; or by email at scs.ug.advisor@cunet.carleton.ca. The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

SCS Computer Laboratory. Students taking a COMP course can access the SCS computer labs. The lab schedule and location can be found here (https://carleton.ca/scs/tech-support/computer-laboratories/). All SCS computer lab and technical support information can be found here (https://carleton.ca/scs/tech-support/). Technical support staff may be contacted in-person or virtually, see this (https://carleton.ca/scs/tech-support/contact-it-support/) page for details.

Mental Health and Wellness. Check Carleton Wellness Website (https://wellness.carleton.ca/) for information.

Academic Accommodations and Regulations

Academic Accommodation Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (https://students.carleton.ca/course-outline/).

Generative AI Usage In this course you may use AI tools (like ChatGPT) for error-checking of grammar and spelling. Other use of such tools in any work submitted for grading is prohibited.

Academic Integrity Students are expected to uphold the values of academic Integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using artificial intelligence tools such as ChatGPT when your assessment instructions say it is not permitted.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy (https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf). A list of standard sanctions in the Faculty of Science can be found here (https://science.carleton.ca/academic-integrity/).

Additional details about this process can be found on the Faculty of Science Academic Integrity website (https://science.carleton.ca/academic-integrity/).

Students are expected to familiarize themselves with and abide by Carleton University's Academic Integrity Policy (https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf).

COMP 4108 addendum on academic integrity: Beyond other standard university policies, any student submitting work in this course, including uncited portions originating from someone else, is subject to a mark of negative 100% on the entire work item. For example, if an assignment is worth 6%, the 6% is lost plus a further 6% penalty, making the best possible course mark 88%. Both students may be penalized if the infraction involves copying from another student. Except for authorized group work, each student must write up submitted work individually from their own personal notes, unless given written permission explicitly to do otherwise.

Student Rights & Responsibilities Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the 7 Rights and Responsibilities Policy (https://carleton.ca/studentaffairs/student-rights-and-responsibilities/#sect1.1) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.