

COMP 4108 (Winter 2020): Computer Systems Security

General Course Information

- **Course Registration Number (CRN):** 11095 (https://central.carleton.ca/prod/bwysched.p_display_course?wsea_code=EXT&term_code=202010&disp=11277716&crn=11095)
- **Classes run:** Jan 06, 2020 to Apr 07, 2020
- **Weekly schedule:** Tuesdays and Thursdays, 04:05pm to 05:25pm
- **Room:** Tory Building (TB) 340 (Carleton campus map (<https://www.carleton.ca/campus/map/#TB>))
- **Instructor:** Dr. AbdelRahman Abdou (abdou at scs.carleton.ca)
- **Office hours:** Tuesdays and Thursdays, 03:00pm to 04:00pm, in Herzberg Building (HP) 5130 (Carleton campus map (<https://carleton.ca/campus/map/#HP>))
- **TAs:** Christopher Bellman (christopherbellman at cmail.carleton.ca), and Ali Jahromi (AliSadeghijahromi at cmail.carleton.ca)
- **TA's office hours:** TBD
- **No tutorials.**
- **Material and resources:** Computer Security and the Internet: Tools and Jewels (<https://people.scs.carleton.ca/~paulv/toolsjewels.html>), 2019. Springer. (Textbook by Dr. Paul Van Oorschot).
- **Class discussion forum:** Piazza for COMP 4108 (<https://piazza.com/carleton.ca/spring2020/comp4108>) (please enroll yourselves).

Course Summary

Introduction to information security in computer and communications systems, including network, operating systems, web and software security; Passwords, authentication applications, privacy, data integrity, anonymity, secure email, IP security, security infrastructures, firewalls, viruses, intrusion detection, network attacks.

Grading Scheme

The course has the following grading scheme:

- **30%** Assignments (<https://ccsl.carleton.ca/~chris/comp4108/index.shtml>).
- **30%** Midterm test.
- **40%** Final exam.

Page Updates and Action Items

- **Jan 2:** the course's webpage is up.

Course Outline

Week	Date (2020)	Topic
Week 1	Jan 7 Jan 9	Ch.1: Basic Concepts and Principles
Week 2	Jan 14 Jan 16	Ch.2: Cryptographic Building Blocks
Week 3	Jan 21 Assignment 1 Jan 23	Ch.3: User Authentication
Week 4	Jan 28 Jan 30	Ch.4: Authentication Protocols and Key Establishment
Week 5	Feb 4 Assignment 2 Feb 6	Ch.5: Operating Systems Security and Access Control
Week 6	Feb 11 Feb 13	Midterm test (in class) Ch.6: Software Security
Week 7	Feb 18 Assignment 3 Feb 20	Winterbreak (No class)
Week 8	Feb 25 Feb 27	Ch.6: Software Security
Week 9	Mar 3 Mar 5	Ch.7: Malicious Software
Week 10	Mar 10 Assignment 4 Mar 12	Ch.8: Public Key Certificate Management and Use Cases
Week 11	Mar 17 Mar 19	Ch.9: Web and Browser Security
Week 12	Mar 24 Mar 26 Assignment 5	Ch.9: Web and Browser Security Ch.10: Firewalls and Tunnels
Week 13	Mar 31 Apr 2	Ch.10: Firewalls and Tunnels Ch.11: Intrusion Detection and Network-based Attacks
Week 14	Apr 7 Apr 9 Apr 13-25	Ch.11: Intrusion Detection and Network-based Attacks (No class) Final exam (TBD)

University Policies

For information about Carleton's academic year, including registration and withdrawal dates, see Carleton' Calendar (<https://calendar.carleton.ca/academicyear/>).

Pregnancy Obligation. Please contact your instructor with any requests for academic accommodation during

the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit Equity Services (<https://www.carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>).

Religious Obligation. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit Equity Services (<https://www.carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>).

Academic Accommodations for Students with Disabilities. If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) (<https://www.carleton.ca/pmc>) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made.

Survivors of Sexual Violence. As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities. Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. More information can be found here (<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>).

Medical Certificate. Please use the official medical certificate form (<https://www.carleton.ca/registrar/forms>) for the deferral of assignments due to medical reasons.

Student Academic Integrity Policy. Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of *F* in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.

Plagiarism. As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science. First offence, first-year students (< 4.0 cr): Final grade reduction of one full grade (e.g., A- becomes a B-, if that results in an F, so be it). First offence (everyone else): F in the course. Second offence: One-year suspension from program. Third offence: Expulsion from the University. Note: these are minimum penalties. More-severe penalties will be applied in cases of egregious offences (e.g., a first-year student accessing CULearn from their phone during an exam will be given an F in the course; bribing a faculty member for a better grade would be grounds for suspension, etc.)

Unauthorized Co-operation or Collaboration. Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

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