



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
COURSE OUTLINE

1. **Course:** CPSC 527, Computer Viruses & Malware -- Fall 2017

Lecture 01: (TR, 09:30-10:45 in SS209)

Instructor Name	Email	Phone	Office	Hours
John Aycock	aycock@ucalgary.ca	(403) 210-9409	ICT 650	Drop-in or by appointment

Course Site:

<http://www.cpsc.ucalgary.ca/~aycock/527>

Department of Computer Science: ICT 602, 403 220-6015, cpsc@cpsc.ucalgary.ca

2. **Prerequisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

Computer Science 313, 457 and consent of the Department.
Lectures may run concurrently with Computer Science 627[CPSC627].

3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %
Assignments	50%
Take-home midterm	20%
Take-home final exam	30%

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows;

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum Percent Required	100.0	93.75	87.5	81.25	75	68.75	62.5	56.25	50	43.75	37.5

Rounding will be performed if necessary using the usual method. The instructor may convert a grade of "A" to an "A+" at his discretion for outstanding performance in all components of the course.

Bear in mind that a grade of D+ or below will result if 50% or better on the overall assignment mark and 50% or better on the overall exam mark (final and midterm combined) is not achieved.

Students will be required to sign a legal form in order to take this course. Strict lab protocols will be in effect; failure to adhere to these protocols will result in an automatic "F" grade in the course.

4. **Missed Components of Term Work:**

The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the

Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.3](#) of the University Calendar

5. **Scheduled out-of-class activities:**

There are no out-of-class activities scheduled for this course.

6. **Course Materials:**

7. **Examination Policy:**

Tests are take-home exams.

Students should also read the Calendar, [Section G](#), on Examinations.

8. **Approved Mandatory and Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course

9. **Writing across the Curriculum Statement:**

See Section E.2 of the University Calendar.

10. **Human studies statement:**

Students will be expected to participate as subjects or participants in projects.

11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

a. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.

b. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

c. **Academic Accommodation Policy:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at [procedure-for-accomodations-for-students-with-disabilities_0.pdf](#).

Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Undergraduate Affairs of the Department of Computer Science, Nathaly Verwaal by email nmverwaa@ucalgary.ca or phone 403-220-8485.

d. **Safewalk:** Campus Security will escort individuals day or night (www.ucalgary.ca/security/safewalk/). Call [403-220-5333](tel:403-220-5333) for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

e. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see also www.ucalgary.ca/legalservices/foip.

f. **Student Union Information:** VP Academic, Phone: [403-220-3911](tel:403-220-3911) Email: suypaca@ucalgary.ca. SU Faculty Rep. Phone: [403-220-3913](tel:403-220-3913) Email: sciencerep@su.ucalgary.ca; Student Ombudsman, Email: suypaca@ucalgary.ca

g. **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy, you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these Surveys.

i. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for

students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).

Department Approval:

Electronically Approved

Date: 2017-08-30 09:18

Course Outcomes

1. Be able to read, comprehend, and summarize an academic security research paper
2. Know some laws that pertain to malware
3. Be able to recognize situations that may present ethical problems; be able to reason through ethical problems and determine a course of action
4. Be able to exploit a software flaw to execute arbitrary code
5. Analyze defenses to identify potential workarounds
6. Know the definitions of different types of malware, and the problems with precise definitions; know some trends and concerns of the anti-malware community; know some trends and historical background of malware; be able to recognize a likely virus hoax; know some social engineering techniques and their countermeasures
7. Know a range of techniques used in malware implementation; know a range of techniques used in anti-malware implementation
8. Be able to analyze simple malware
9. Be able to write code to detect, identify, and remove simple malware
10. Have a hands-on understanding of how malware is created