DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
UNIVERSITY OF TORONTO MISSISSAUGA

CSC358H5S LEC0101
Principles of Computer Networks
Course Outline - Winter 2018

Class Location & Time	Wed, 09:00 AM - 11:00 AM IB 335
Instructor	Joe Lim
Office Location	DH3095
Office Hours	Wednesdays, 11:30AM - 12:30 Noon
Telephone	N/A
E-mail Address	joe.lim@utoronto.ca
Course Web Site	portal.utoronto.ca

Course Description

Introduction to computer networks and systems programming of networks. Basic understanding of computer networks and network protocols. Network hardware and software, routing, addressing, congestion control, reliable data transfer, and socket programming. [24L,12P]

Prerequisite: CSC209H5, 258H5, 263H5, 290H5
Exclusion: CSC358H1,458H1 (SCI)
Distribution Requirement: SCI

Students who lack a pre/co-requisite can be removed at any time unless they have received an explicit waiver from the department. The waiver form can be downloaded from here.

Textbooks and Other Materials

James Kurose and Keith Ross. Computer Networking: *A Top-Down Approach (7th ed)*. Addison Wesley, 2017. 9780133594140.

Assessment and Deadlines

Type	Description	Due Date	Weight
Assignment	PA1	2018-02-16	12%
Assignment	PA2	2018-03-30	18%
Assignment	PS1	2018-02-02	10%
Assignment	PS2	2018-03-09	10%
Term Test	Midterm	2018-02-07	20%
Final Exam	Final Exam	TBA	30%
		Total	100%

More Details for Assessment and Deadlines

This is an introductory course on computer networks. Topics covered in this course include packet switching systems, socket programming, network software, hardware, and protocols, network naming and addressing, congestion control schemes, software-defined networking, network security, and wireless networking. The emphasis of the course is network programming and applications.

You need to have a basic understanding of probability theory, a **strong background** in C, a good understanding of Python, and familiarity with the Unix operating system. If you are not sure whether you have the background to take this course, send your instructor an e-mail.

Assignments

All assignments will be posted by the 2nd week of class with their deadlines. You should manage your time efficiently.

There will be two problem sets (PS1 and PS2), both based on the textbook, and the material covered in the class.

There will also be two programming assignments. The two assignments are related in that you will need your PA1 code for PA2. **No solution will be made available**. You will need to fix your PA1 code based on the feedback you get before you can start working on your PA2. Here is a summary of the requirements for all submitted programming assignments:

- You will use a virtualized network environment (Mininet) for programming assignments.
- The virtual machines will be available in the DH computer labs.
- To ensure compatibility with the marking scripts, please make sure you only use the VM provided through the labs.
- All programs must be written in ANSI "C". No other programming languages are accepted.

Additional information and requirements will be specified in each assignment.

Penalties for Lateness

10% per day of lateness. No assignment will be accepted 48 hours after the deadline.

Procedures and Rules

Missed Term Work

To request special consideration, bring supporting documentation to the instructor in person during office hours at least one week in advance.

In case of illness, bring a U of T medical certificate to the instructor within one week of the missed work. The certificate must specify the exact period during which you were unable to carry out your academic work.

If you believe the rubric used to evaluate your work is not appropriate, you may request a re-mark. For a re-mark to succeed, you must clearly and concisely express what you believe was unfairly marked. To request a re-mark, you must see the instructor during office hours. Be prepared for the entire work to be re-evaluated and for the mark to be adjusted up or down after the re-evaluation. All re-mark request must be done within one week of when your work was returned to you.

Missed Final Exam

Students who cannot write a final examination due to illness or other serious causes must file an online petition **within 72 hours of the missed examination**. Original supporting documentation must also be submitted to the Office of the Registrar **within 72 hours of the missed exam**. Late petitions will **NOT** be considered. If illness is cited as the reason for a deferred exam request, a U of T Verification of Student Illness or Injury Form must show that you were **examined and diagnosed at the time of illness and on the date of the exam, or by the day after at the latest**. Students must also record their absence on ACORN on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of $70 is required for each examination approved.

Academic Integrity

Honesty and fairness are fundamental to the University of Toronto's mission. Plagiarism is a form of academic fraud and is treated very seriously. The work that you submit must be your own and cannot contain anyone elses work or ideas without proper attribution. You are expected to read the handout How not to plagiarize (http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize) and to be familiar with the Code of behaviour on academic matters, which is linked from the UTM calendar under the link Codes and policies.

- Never look at another student's (or team's) assignment solution, whether it is on paper or on the computer screen, and never show another student your assignment solution. This applies to all drafts of a solution and to incomplete solutions.
- We encourage you to discuss course concepts and to study for exams with other students, but the assignments should be your work. The easiest way to avoid plagiarism is to only discuss the assign- ment with the TA, or the instructor. Similarly, google (and wikipedia) may help you with course material, but do not use the internet to look for solutions to the assignment problems.

Final Exam Information

Duration:	3 hours
Aids Permitted:	Non-Programmable Calculators 1 page(s) of double-sided Letter (8-1/2 x 11) sheet

Additional Information

Please include CSC358 in your subject line on any email you send me. I teach other courses as well and I want to ensure that I respond with the proper information. Any course related questions should be posted on the discussion board. You will get a faster response.

Date	Lecture	Due Dates
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Jan 3	Introduction and Course Overview	No tutorial for this week
Jan 10	Link Layer	Tutorial: Intro to Mininet and Wireshark
Jan 17	Internetworking	Tutorial: PA1 Overview
Jan 24	Advanced Internetworking	Tutorial: PS1 Q & A
Jan 31	Internet Topology and Routing	Tutorial: Midterm Review
Feb 2	PS1 Due @11:59PM	
Feb 7	Midterm	Tutorial: PA1 Q & A
Feb 14	Transport Protocol	Tutorial: PA1 Q & A
Feb 16	PA1 Due @11:59PM	
Feb 20-23	Reading Week	No Tutorial
Feb 28	Congestion Control	Tutorial: PS2 Q & A
Mar 7	Queueing Mechanisms and Middleboxes	Tutorial: PA2 Q & A
Mar 9	PS2 Due @11:59PM	
Mar 14	Software Defined Networking	Tutorial: PA2 Q& A
Mar 21	Network Security	Tutorial: Final Review
Mar 28	Wi-Fi, IPv6 and Wrap-up	No Tutorial
Mar 30	PA2 Due @11:59PM	
TBA	Final Exam	

Last Date to drop course from Academic Record and GPA is March 14, 2018.