University of Toronto
Edward S. Rogers Sr. Dept. of Electrical & Computer Engineering

ECE361 Computer Networks I – winter 2021

Course Management Form

Instructor

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  Criteria for Emails:
  - Subject area of the email should include course name, section number, and intention, e.g.
    - ECE361: Missing mark

  Office Hour: TBD

Lectures

- Mondays, Wednesdays, Thursdays 3 – 4PM

Tutorials

- TUT0101: Mondays 4 -5PM (Starts January 18)
- TUT0102: Wednesdays Noon -1PM (Starts January 20)

Notes: All lectures and tutorials are delivered online (Bb Collaborate) and the attempt is to provide recording as well.

Textbook

Kurose and Ross, "Computer Networking: A Top Down Approach", 7th Ed., Pearson, ISBN: 9780133594140

Complementary Readings

- Peterson and Davie, "Computer Networks", Morgan Kaufmann, 2003.

Course description in the calendar

- Layered network architectures; overview of TCP/IP protocol suite. Introduction to sockets; introduction to application layer protocols. Peer-to-Peer Protocols: ARQ; TCP reliable stream service; flow control. Data Link Controls: Framing; PPP; HDLC. Medium access control and LANs: Aloha; Ethernet; Wireless LANs; Bridges. Packet Switching: Datagram and virtual circuit switching; Shortest path algorithms; Distance vector and link state algorithms.
- Prerequisite: STA286H1 or ECE302H1
  Co-requisite: ECE302H1. (Students must take the co-requisite, ECE302H1 in the same term as ECE361H, OR in a term before taking ECE361H1.)

Wireshark Labs

- Students will form groups of two. Each group will submit only one report. The mark of the report will be given to both group members. Read and follow the schedule provided in the Wireshark handout as posted under Files/Labs/Wireshark.
- There are two Wireshark lab training on **January 18 from 3-5pm and January 20 from 10am to Noon** on Bb Collaborate.

Programming Labs

- Students will form groups of two (the same group as the Wireshark labs). See below for the Lab schedule and details.
- All programming labs will use C language.

Tutorials

- In each tutorial session, the TA will solve some sample problems. Please refer to the detailed list of tutorials and the coverage of each tutorial for more information.

Evaluation

- Labs:
  - Wireshark Labs 5%
  - Programming Labs 20%
- Quizzes/Participations 10%
- Midterm 25%
- Final Exam 40%

100%

Midterm

- Is approximately for 90 minutes and is scheduled on Monday March 01 during the lecture online.
- Aids:
  - Textbook and lecture slides are allowed.
  - Calculator Type: 2 (non-programmable calculators)
  - No other electronics devices are allowed except using a computer for communication purposes.
  - No other aids.

There are no make-up midterm or Labs. If you miss the midterm or a lab then consideration will be given, provided an approved petition by the department (petitions are submitted online) as follows:

- If you missed a lab session (Except the last Lab) and your petition is approved, you will be provided with an opportunity to redo the missed lab during your upcoming labs.
- If you missed the last Lab and your petition is approved then:
  - If resources are available then you will be given a chance to make up for that lab.
  - If resources are not available then your average lab mark will be calculated based on other labs and course average on the missed lab.
- If you missed midterm and your petition is approved, your midterm mark will be transferred to the final exam.

Academic Offences

- Will be handled according to faculty policy (see the Academic Regulations section of the Faculty of Applied Science and Engineering Calendar).

ECE361 - Fall 2021
Course Schedule and Reading

Note: this is a tentative list and basesd on the course progress may change in terms of content or order.

Week	Date	Lecture	Topic	Reading
1	Jan.11-15	1	Course Introduction	-
		2	Introduction to Computer Networks	1.1-1.2
		3	Circuit Switching and Packet Switching	1.3
2	Jan.18-22	4	Layered Architecture	1.4, 1.5
		5	Applications	2.1 - 2.2
		6	HyperText Transfer Protocol (HTTP)	2.2
3	Jan.25-29	7	Cookies, Caching, Conditional Get, FTP	2.3
		8	Domain Name System	2.5
		9	P2P File Sharing	2.6
4	Feb. 1-5	10	Transport layer, UDP	3.1, 3.2, 3.3
		11	Stop-and-Wait ARQ	3.4
		12	Selective Repeat ARQ/Go-Back-N ARQ	3.4
5	Feb. 8-12	13	Transport Control Protocol (TCP)	3.5
		14	Flow Control	3.6
		15	Congestion Control	3.7
6	Feb. 15-19		**Reading Week**	
7	Feb.22-26	16	Virtual Circuits and Datagram	4.1, 4.2
		17	Inside a router, Internet Protocol	4.3, 4.4.1
		18	Review/IP Addressing	4.4
8	March 1- 5	19	**Midterm, Monday March 01**	
		20	CIDR, DHCP	4.4
		21	NAT	4.4
9	March 8 - 12	22	ICMP	4.4
		23	IPV6	4.4.4, 4.5.1
		24	Routing- Distance Vector	4.5.2
9	March 15 - 19	25	Routing- Distance Vector - Hierarchical	4.5.2, 4.5.3
		26	Routing in the Internet, RIP, OSPF	4.6.1, 4.6.2
		27	BGP - Flooding	4.6.3, 4.7
10	March 22 - 26	28	Broadcast and Multicast	4.7
		29	Link layer, Error Detection	5.1
		30	Cyclic Redundancy Check (CRC)	5.2
11	Mar. 29-Apr. 2	31	Multiple Access - ALOHA - Slotted ALOHA	5.3.1, 5.3.2
		32	Carrier Sense Multiple Access, Ethernet	5.3.2, 5.4.2
		33	MAC Addressing - ARP	5.4.1
12	April 5 - 9	34	Link Layer Switches, VLAN	5.4.3, 5.4.4
		35	Simple Mail Transfer Protocol (SMTP) (Will be covered later)	2.4
		36	FTP	2.3
13	April 12 - 16	37	CSMA/CA	6.3
		38	Review	-
		39	Review	-

Labs schedule

ECE361 Programming Labs Schedule (Winter 2021)

Section	Date	Time	Location	Programming Lab	Material Due	Marks
PRA0101	03-Feb-21	9 AM - Noon	Online	1	Section 1 of File Transfer Lab	2 1 works; 1 questions
PRA0102	03-Feb-21	Noon - 3 PM				
PRA0103	01-Feb-21	Noon - 3 PM				
PRA0101	24-Feb-21	9 AM - Noon		2	Section 2 and 3 of File Transfer Lab	4 2 works; 2 questions
PRA0102	24-Feb-21	Noon - 3 PM				
PRA0103	22-Feb-21	Noon - 3 PM				
PRA0101	10-Mar-21	9 AM - Noon		3	Section 4/Overall File Transfer Lab	4 2 works; 2 questions
PRA0102	10-Mar-21	Noon - 3 PM				
PRA0103	08-Mar-21	Noon - 3 PM				
PRA0101	24-Mar-21	9 AM - Noon		4	Section 1 of Text Conferencing Lab	6 4 works; 2 questions
PRA0102	24-Mar-21	Noon - 3 PM				
PRA0103	22-Mar-21	Noon - 3 PM				
PRA0101	07-Apr-21	9 AM - Noon		5	Section 2 of Text Conferencing Lab	4 2 works; 2 questions
PRA0102	07-Apr-21	Noon - 3 PM				
PRA0103	05-Apr-21	Noon - 3 PM				