PRINCIPLES OF COMPUTER NETWORKS COMP 3203
(September 1, 2021)

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1   DELIVERY METHOD

Synchronous course, meetings via web conferencing tools on Zoom at scheduled time. The video conference link for the lecture is posted at the course web page in Brightspace. Homework, assignments and other activities will be completed outside of class and submitted in Brightspace. Students are expected to be available during the synchronous meeting times.

2   CONTACTS

- Evangelos Kranakis, Office 5360 HP,
  Office hrs Tue & Thu 10 am to 11 am (via Zoom Link)
- TA (Email) [Office Hours]

  - Aniqa Binte Alam (aniqabintealam@cmail.carleton.ca) [TBA]
  - Fatemeh Banaeizadeh (fatemehbanaeizadeh@cmail.carleton.ca) [TBA]

- TA Office Hours are held via web conferencing tools.

3   COURSE DESCRIPTION

This is an introductory course in Network Computing. Topics include:

- Protocol Architectures and Internetworking,
- Types of Networks,
- Communication Protocols,
- End-System and Network Traffic Management,
- Structure of Routing and Congestion Control.

Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4602.
Prerequisite(s): COMP 2401, and one of COMP 2402, SYSC 2100.

CONTENTS OF LECTURES

1. **Week 01:** Speed, Historical
2. **Week 02:** Introduction, Outline, Layering (**Assignment 1**)
3. **Week 03:** Performance, Transmission
4. **Week 04:** Data Link Layer, Error Detection (**Quiz 1: Thu Sep 30**)
5. **Week 05:** Error Correction, Connectivity
6. **Week 06:** ARQs, Queues, Multiaccess (**Assignment 2**)
7. **Week 07:** Ethernet, LANs
   October 25-29 Fall Break
8. **Week 08:** Wireless, Location Awareness (**Quiz 2: Thu Nov 04**)
9. **Week 09:** GPS, Locality
10. **Week 10:** Token Ring, MANs, WANs (**Assignment 3**)
11. **Week 11:** Routing
12. **Week 12:** IP (**Quiz 3: Tue Nov 30**)
13. **Week 13:** TCP
14. **Final Quiz:** TBA

NB: Material covered in lectures may vary depending on time available. Lecture Notes (labeled LEC) and Class Notes (labeled CLA) in PDF are posted in Brightspace before and after the lecture, respectively, in a timely manner. Live video recordings of the lectures will also be provided.

4 ASSESSMENT AND REQUIREMENTS

Following are evaluation details and requirements for the course.

Grading and Course Work

Type of Test	#	% Each	% Total	Where
Assignments	3	12%	36%	Homework
Quiz 1 (20 min)	1	13%	13%	In Class
Quiz 2 (20 min)	1	13%	13%	In Class
Quiz 3 (20 min)	1	13%	13%	In Class
Quiz 4 (40 min)	1	25%	25%	TBA

Quizzes and Assignments

The purpose of **Quizzes** is to help you review the material covered in class in a timely manner. Quiz questions are based on everything that we covered in class up to and including the last lecture prior to this quiz. You should be familiar with all the material covered from the beginning of the course. Quiz questions are generally simpler than assignment

questions. Quizzes will be scheduled during class time except for the last quiz which will be scheduled at a later time. All quizzes will be web based.

The purpose of **Assignments** is to understand deeper material related to issues discussed in class. Assignments are homework based. From the day an assignment is handed out, you will have about three weeks time to complete and submit them.

Additional Details

- **Assignments**

  1. All assignments are compulsory and must be uploaded to the course web site in Brightspace on the due date and time. Submit only in pdf format (DO NOT SUBMIT zip, wordperfect, etc.) It is preferable for the assignments to be typed. Late assignments will not be accepted. Assignments will be submitted through Brifgtspace's course web site. Missing assignments are worth 0%.
  2. You are expected to work on your assignments consistently once they are released. As a result, the instructor does not grant exemptions for the assignments. Under extenuating circumstances, if you are seeking additional accommodations for your assignments (perhaps due to an ongoing medical issue, for instance), you may petition the Associate Dean's office.
  3. Plagiarism will not be tolerated. You must always write up the solutions to assignment problems on your own and acknowledge your sources in case you used library material. On the first occasion, plagiarizing an assignment will result in assigning a 0 to all the students involved and continuation of this practice may have severe repercussions for the student(s) involved.
  4. Avoid posting code and/or solutions of assignments online on github and other places in the cloud. Other students have found that code and plagiarized their assignments and projects. Students posting their code and/or solutions assignments online are making themselves a potential party to plagiarism.

- **Quizzes**

  1. Make-up quizzes are not possible. In case you miss any one of the quizzes 1 to 3 the quiz grade will be averaged, but to qualify you must submit a critical analysis (5 pages, double-spaced) of the topics covered (within two weeks from the date the quiz was held) for that quiz and get a passing grade. (This includes any absences for medical reasons.) Failing to do so you get 0% grade. This rule applies to at most one quiz.

- **Attendance**

  1. Class attendance and participation is encouraged and highly recommended because additional material is being discussed and clarified in class.
  2. Office hours are held by the instructor and the TA on a regular basis and students are encouraged to make use of them.

5 USEFUL BOOKS (Not Required)

Your study should be based on the lecture notes (labeled LEC) as well as nores of in-class discussions (labeled CLA) and additional material provided. Although I will not follow any of the books below you can use them as a guide for supplementary material and further study. Additional material on each topic can also be found on the internet.

- M. Barbeau and E. Kranakis, Principles of Ad Hoc Networking, Wiley, xx + 254 pages, 2007, ISBN: 978-0-470-03290-0, Hardcover, 2007.
- L. L. Peterson and B. S. Davie, Computer Networks: A Systems Approach 5E, Morgan Kaufmann, Computer networks, ISBN:0123740134
- A. S. Tanenbaum, Computer-Networks, 4th Edition, Pearson Education, Prentice Hall, 2003.

The first is specialized on recent issues on Ad Hoc Networking, and the second and third on general networking techniques. You can purchase the books either from the University or any commercial bookstore. Further, you can use information available in the internet or in numerous other books.