CSC 2229: Computer Networks for Machine Learning, Winter 2026

Department of Computer Science, University of Toronto

Handout # 1 – Information Sheet **Date:** Tuesday, January 6th

Class Time: Tuesday 1 PM -3 PM
Location: BA 2145

Instructor: Prof. Yashar Ganjali
E-mail: yganjali @ cs . toronto . edu
Office hours: Tuesday 3 PM – 4 PM, or
by appointment
Location: BA 5238

Class web page:
http://www.cs.toronto.edu/~yganjali/teaching/csc2229-winter-2026/

Course Description

This MSc/PhD-level course delves into the core challenges of interconnection networks, emphasizing the use of machine learning to address these issues. The rapid growth of computing demands, driven by machine learning applications, has introduced significant challenges in areas such as bandwidth, latency, and packet loss. Meeting these demands requires innovative techniques and a fresh approach to traditional networking solutions across various layers, including the link, transport, and application layers.

The course begins with a review of key concepts in computer networking, such as packet-switching systems, data center networks, and software-defined networking. It then explores advanced research challenges and cutting-edge solutions in the field. Topics include:

- Hyperscale data center networking
- Switch and controller design
- Reliability, monitoring, and fault tolerance
- Network optimization techniques
- Network-Application Integration, reconfigurable data center networks
- High-performance transport in data centers, focusing on congestion control, flow control, scheduling, and prioritization

Prerequisites

A previous course on computer networks (CSC2209H or equivalent) is highly recommended. Basic undergraduate courses in algorithms and probability theory are recommended.

Textbook

The course is based on recent research material, and we do not have a textbook.

Grading

- Paper presentation: 20%
- Final project: 70%
    - Proposal: 5% - Due:
    - Intermediate report: 10% - Due:
    - Presentation: 20% - Last two days of classes
    - Final report: 35% - Due:
- Active participation in class and discussions: 10%

Late Submission Policy

You have a free late submission of two days. You can use these two days on one of the deliverables (proposal, intermediate, or the final report). You need to notify that TA before using your free late submission.

In addition to the free late submission, you can submit each assignment late by up to two days. For each late day beyond the free late submission, 10% of the mark will be deducted (up to 20%). Assignments/project reports will not be accepted after two days.

Bulletin Board

Please use our class bulletin board (on Piazza) to ask questions or discuss any course-related topics. You can sign up to the bulletin board here:

https://piazza.com/utoronto.ca/winter2026/csc2229

By using the bulletin board, everyone in class can read the replies, and the overall number of repeat questions is reduced. Please check the bulletin board before posting any new questions. If you have any questions that cannot be posted on the bulletin board (e.g. questions about your grades), you can e-mail the TA or the course instructor directly.

Please make sure to check the *announcements* folder regularly for updates regarding lectures, assignments, etc. or enable notifications on Piazza.

In addition to our bulletin board, we have a mailing list that will be used exclusively for sharing important information. We will use the email address you have used on ACORN to create this list (please make sure that is a valid email address). Please do not use this email to ask questions.

Academic Offenses

"Briefly, an academic offence is a bad thing done to get marks you don't deserve. Slightly more formally, an academic offence is an action by a student or course instructor that breaks the rules about academic credit at the University of Toronto."[1] Cheating is considered a very serious offense. Please avoid it! We are all here to teach and learn after all, and concerns about cheating make an unpleasant environment for everyone.

Permitted Collaboration

[1] Jim Clark, "Advice about academic offenses", http://www.cs.toronto.edu/~clarke/acoffences/.

The following items are encouraged and allowed at all times for all students in this class:

- Discussion of material covered during lecture, problem sessions, or in handouts
- Discussion of the requirements of an assignment
- Discussion of the use of tools or development environments
- Discussion of general approaches to solving problems
- Discussion of general techniques of coding or debugging
- Discussion between a student and a TA or instructor for the course

Collaboration Requiring Citation

Two students engaging in more detailed discussions must be careful to document their collaboration. Students are required to include the names of those who provide specific assistance to properly credit their contribution, in the same manner as one would cite a reference in a research paper. The expectation is that even with a citation, the author must be able to explain the solution.

Examples of Collaboration That Require Citation

- Discussing the "key" to a problem set or programming assignment. Problem set questions are often designed such that the critical concept takes careful thought and gaining that insight from someone else must therefore be documented.
- Discussing the design of a programming project. Design is a crucial aspect of the programming process and discussion can be valuable. Any design input received from others must be cited.
- Receiving assistance from another student in debugging code. While the TAs are the preferred source for advice, any detailed assistance from someone else must be credited.
- Sharing advice for testing. For example, if someone provides important information on lessons learned ("my program didn't handle the case where the value was 0") that source must be credited.
- Research from alternative sources. Researching related topics, such as through the Internet, must be documented if the solution submitted is derived from the research information.

Unpermitted Collaboration

All submissions must represent original, independent work. Some examples of activities that do not represent original work include:

- Copying solutions from others. In particular, do not ask anyone to provide a copy of his or her solution or, conversely, give a solution to another student who requests it. Similarly, do not discuss algorithmic strategies to such an extent that you and your collaborator submit exactly the same solution. Use of solutions posted to websites, such as at other universities, is prohibited. Be aware that we photocopy some of the exams prior to handing them back.
- Using work from past classes. The use of another student's solution or the posted class solutions from a previous class constitutes a violation.
- Studying another student's solution. Do not read another solution submission whether in electronic or printed form, even to "check answers."

- Debugging code for someone else. When debugging code it is easy to inadvertently copy code or algorithmic solutions. It is acceptable to describe a problem and ask for advice on a way to track down the bug. [2]

Use of Artificial Intelligence Tools

All submissions must represent original and independent work. Therefore, you are not allowed to use AI to directly generate output for any of the assignments in this course.

However, use of AI is permitted to ask general questions similar to what is described in the permitted collaboration section above. You are required to explicitly cite any use of these tools in your submission.

More Resources on Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. Please see the link below:

https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019

If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources. For example, to learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at http://www.writing.utoronto.ca. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations.

For more information, please see A&S Student Academic Integrity found here:

https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity

Also check the University of Toronto Website on Academic Integrity:

https://www.academicintegrity.utoronto.ca

[2] Parts of this note are based on handouts from Nick McKeown, and Tom Fountain, who teach CSC244a and EE182 respectively at Stanford. Some portions are based on similar collaboration policies written by Eric Roberts, Julie Zelenski, and the Computer Science Department at Brown University.