CS 598 Proof Complexity: Algorithms and Lower Bounds
McGill University
Department of Computer Science
Fall 2020

General Information

Course Instructor:	Robert Robere
Office:	Online
E-Mail Address:	robere@cs.mcgill.ca
Lecture Times:	Tuesday, Thursday from 2:35-3:55. (First class September 3rd)
Lecture Room:	Zoom Online (Link through myCourses)
Office Hours:	Weekly, but exact time TBD
Course Homepage:	https://www.cs.mcgill.ca/~robere/comp598/index.html

Grading Scheme

Type	Percentage
Participation	10%
Assignments (2-3)	60%
Final Project	30%

Above, participation is defined as: attending and actively participating in lectures — asking questions, participating in class discussions, and so on.

The assignments in this course will be posted on the course website with their deadlines. **Assignments must be submitted by the beginning of class on the due date.** Assignments must be cleanly handwritten or typeset using a suitable program (e.g. LaTeX). If they are handwritten and scanned, *please* ensure that the assignment is readable — if a solution is not readable, it will not be graded.

Note that this is a "proof" course: assignment questions will ask you to formally prove or disprove various formal mathematical statements. The mathematics in the course will be almost completely self-contained — all that's needed is a solid background in discrete mathematics and mathematical maturity.

Textbook

There is no textbook for this course, however there are some books for useful supplementary reading.

- Stasys Jukna. *Boolean Function Complexity*.
  Contains an excellent chapter on proof complexity and lots of results in circuit complexity — substantial overlap with the material covered in this course.

- Jan Krajíček. *Proof Complexity*. Available online here:
  https://www2.karlin.mff.cuni.cz/~krajicek/prfdraft.html
  New book on proof complexity by one of the masters, excellently written.

Communication Policy

Communication in this course (outside of lectures or office hours) will be through e-mail. Email is the preferred way to contact the instructor and the teaching assistants for personal issues. Feel free to email the instructor regarding any course-related personal issues. Please use descriptive subject lines for your emails and include "COMP 598". Finally, **please refer to the course website at least once a week for announcements.**

Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offenses under the Code of Student Conduct and Disciplinary Procedures (see `http://www.mcgill.ca/integrity` for more information). Most importantly, work submitted for this course must represent your own efforts. Copying assignments or tests from any source, completely or partially, allowing others to copy your work, will not be tolerated.

Having said this: *please work with and talk to other students!*. I absolutely encourage you to work together — it is the best way to learn. What is important is that the *final, submitted work* is your own.

Inclusivity

This course seeks to be a fully inclusive learning environment! That being said, if you experience barriers to learning in this course, please reach out to me and talk to me about it. This is especially important given the current remote-learning situation we are dealing with. If applicable, you can also reach out to the Office for Students with Disabilities (514-398-6009).

Submission of written work in French.

In accord [sic] with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.