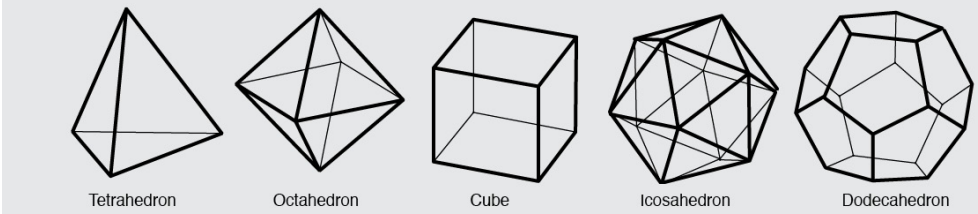
MATH 240 - Discrete structures 1 **Fall 2018**



Course topics. Mathematical foundations of logical thinking and reasoning. Mathematical language and proof techniques. Sets, functions, and relations. Quantifiers. Induction. Elementary number theory. Modular arithmetic. Recurrence relations. Combinatorial enumeration. Introduction to graph theory.

Lectures: Tue, Thu 8:30–10:00 in Leacock 26 (Section 002)

Instructor: Bogdan Nica

Office Hours: Wed, Fri 10:30–12 in Burnside 1131

Email: bogdan.nica@mcgill.ca (use subject "Math 240: ...")

Reference texts. The lectures constitute the primary source of course material. The textbooks below will be used as secondary sources of course material. A list of relevant textbook sections will be provided on the course website.

- *Discrete Mathematics: Elementary and Beyond*, by L. Lovász, J. Pelikán, and K. Vesztergombi (Undergraduate Texts in Mathematics. Springer 2003)
- *Book of Proof*, by Richard Hammack. Available at `http://www.people.vcu.edu/~rhammack/BookOfProof/`

Tutorial. There is one tutorial each week, taught by a teaching assistant. The purpose of the tutorial is to see more examples, at a slower pace than during the lecture. Attendance at the tutorial is recommended, but not required. You are strongly encouraged to ask questions during the tutorial. There are two scheduled times, you may attend either of them. Registration is not required. The material covered at each time will be similar.

Grade. Maximum of scheme **A**: 10 % Homework, 5% Webwork, 25% Midterm, 60% Final, and scheme **B**: 10 % Homework, 5% Webwork, 15% Midterm, 70% Final.

Exams. Midterm exam – the date and location will be announced on the course website. Comprehensive final exam – see exam schedule for date and location.

Written assignments. There will be four written homework assignments. Your proofs must be written *clearly* using *precise mathematical language*, and this constitues an evaluation criterion for your assignments. You are encouraged to use the LaTeX typesetting system to prepare your assignments, as it is a valuable skill to learn.

WeBWorK assignments. There will be several assignments given via the online system WeBWorK. These assignments will focus on computational problems. Access WeBWorK at `http://msr02.math.mcgill.ca/webwork2/MATH240_FALL2018/`

Your username and password are both set to your McGill student ID by default. Please change your password after logging in the first time. For any login problems, please email Donna Clarke `<it.mathstat@mcgill.ca>`. For all other problems, please email Dr. Jeremy Macdonald `<jeremy.macdonald@mcgill.ca>`.

Assignment submission. WeBWorK assignments are distributed and submitted via WeBWorK, and written assignments are distributed and submitted via myCourses. Paper submissions of written assignments are not accepted. Handwritten assignments are acceptable; please ensure that you provide a clear scan of your assignment. Late assignments are not accepted. Requests for brief extensions will be considered on an individual basis, provided the request is made a reasonable time *before* the due date.

Homework policy. You are allowed (in fact encouraged) to discuss the homework with other students, and you may consult books, websites, etc. if you wish. However, you must *write up your own solution.* Direct copying from any sources is not permitted. If you ask for help on internet forums, you are expected to state that your question relates to an assigned homework problem.

Advice: Attend classes. Showing up is just a part of the process. Come prepared, take good notes, and stay focused. Keep your cell phone away. Ask questions and answer questions. Enjoy.

University Policy: McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures. For more information, see `http://www.mcgill.ca/students/srr/honest`.

In accord 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.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Key dates: Start on September 4th. End on November 29th.
Deadlines: September 18th - Add/Drop; September 25th - Withdraw with refund; October 30th - Withdraw without refund.