DISCRETE STRUCTURES II – WINTER 2010

MATH 340


Professor: Louigi Addario-Berry, louigi@math.mcgill.ca
Office hours: Wednesday 13:00-14:00 or by appointment, 1219 Burnside

PLANNED TOPICS

MATCHINGS, FLOWS, CUTS, AND EDGE-COLOURING. Hall’s theorem, Menger’s Theorem, Vizing’s Theorem


TREES. Spanning Trees, minimal spanning trees, Prim’s (Jarník’s) algorithm, Kruskal’s (Borůvka’s) algorithm. Proofs of Cayley’s formula, counting spanning trees.


“EXTREMAL” GRAPH THEORY. Dirac’s theorem, Ramsey’s theorem, Turán’s theorem.

DOUBLE COUNTING. Proofs of Fermat’s little theorem, Cayley’s formula, Sperner’s theorem.

ADDITIONAL TOPICS AS TIME PERMITS.
TEXTBOOK

Matoušek and Nešetril, an invitation to discrete mathematics.

Note: some course material is not covered in the textbook. Also, some may find the MATH 240 textbook (Rosen, Discrete mathematics and its applications) to be a useful reference.

SCHEDULE

Monday, Wednesday, Friday, 11:35-12:25, Arts 260.

GRADING SCHEME

Assignments, 20% (four or five assignments).
Midterm: 30% (in class, March 8)
Final (covers all course material) 50%

Additional information

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.

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 (see www.mcgill.ca/students/srr/honest/ for more information).

You may work in groups of two or three on the assignments but must write up and hand in your solutions individually. The names of the students you worked with must appear on your assignments; failure to list your group members will result in an automatic grade of zero for the assignment.