

## MAT 332F Introduction to Graph Theory

**Instructor:** Alexander Nabutovsky (BA 6104; alex@math.toronto.edu; 416-978-3321)

**Office hours:** Thursday, 10-12.

**Textbook:** Main textbook: Reinhard Diestel “Graph Theory”, Springer, Fourth Edition. Other recommended textbooks: Richard J. Trudeau “Introduction to Graph Theory”, Dover; G. Chartrand and P. Zhang “A first course in Graph Theory”, Dover.

**TA:** Mykola Matviichuk; mykola.matviichuk@mail.utoronto.ca

**TA Office Hours:** Friday , 1-2, or by appointment; BA 6135.

**Marking scheme:** There will be one midterm exam. The midterm will take place on Wednesday, October 21, 19:10-21:00, in MP 103 and will count as 30 percent of the course mark. There will be five quizzes based on suggested lists of homework problems. Each of the quizzes will be counted as 6 percent of the course mark. Each quizz will consist of 2-3 homework problems from the corresponding homework assignment. (Bear in mind that you are expected to solve homework problems at home. You will be given enough time to write down solutions of homework problems that you already know, but not enough time to solve these problems in class.) The final exam will count as 40 percent of the final mark.

**Dates of the quizzes.** The first quizz will take place on Tuesday, October, 20. The dates of the other four quizzes will be announced later.

**Syllabus:** I hope to cover sections marked by \* in the table of contents in the textbook in chapters 1, 2, 3, 4, 5, 7, 9, 10 and, possibly, 8, 11 and 12 as well as some material from sections not marked by \*.

The covered topics will include: Basic definitions; Matchings; Connectivity; Planar Graphs; Colouring; Hamilton cycles; Introduction to Ramsey theory, Introduction to extremal graph theory. If time permits, I will discuss infinite graphs, random graphs and the graph minor theorem.

### Homeworks:

All homework problems are from “Graph Theory” by Reinhard Diestel. Homeworks 2-5 will be posted on blackboard later.

Homework 1: Ch. 1, Problems 2, 3, 6, 7, 9, 11, 12, 17, 27, 30, 41.