Eidgenössische Technische Hochschule Zürich
Ecole polytechnique fédérale de Zurich
Politecnico federale di Zurigo
Swiss Federal Institute of Technology Zurich

Institut für Theoretische Informatik
Dr. Tibor Szabó and Miloš Stojaković

October 20, 2004

Graph Theory *Welcome*

★ Time & Place

Lectures: Wednesday 10:00–12:00 @ IFW B42.

Exercises: Wednesday 15:00–16:00 @ IFW B42.

★ Instructors

Lecturer: Tibor Szabó
IFW B48.1, Tel: (01) 63-20-858, E-mail: szabo@inf.ethz.ch

Assistant: Miloš Stojaković
IFW B43, Tel: (01) 63-27-239, E-mail: smilos@inf.ethz.ch

★ Registration

Those who will participate in the exercise sessions are kindly asked to send their name by e-mail with Subject "GT04" to Miloš Stojaković (smilos@inf.ethz.ch). The collected addresses may be used for (possibly emergent) announcements.

★ Course webpage

The webpage of the course is http://www.ti.inf.ethz.ch/ew/courses/GT04/. In the webpage, the slides from the lectures, the exercises, the solutions of the exercises, and other information will be published.

★ Abstract of the course

This course is an introduction to the theory of graphs intended for students in mathematics and computer science/engineering students with an interest in theory. We start from basic definitions and examples, but hope to move on quickly and cover a broad range of topics. Some applications and relations to Computer Science will also be discussed. Emphasis will be given to reading, understanding and developing proofs. There is no prerequisite, other than basic mathematics introduced in the Grundstudium. Possible topics include: degrees, paths, trees, cycles, Eulerian circuits, bipartite graphs, extremality, matchings, connectivity, network flows, vertex and edge colorings, Hamiltonian cycles and planarity.

★ Textbook

The lecture mainly follows the following book.

- Douglas B. West, Introduction to Graph Theory (2nd edition), Prentice Hall, 2001.

The fourth printing is the latest one. The information about the book (including corrections, etc.) is available from the author's page. This can be reached from the course webpage. If you find another error or typo from the book, please tell us.

The homework exercises will be sampled from this book.

★ Examination

The examination will be held on someday in February or March 2005. It will be a 2-hour written exam, which consists of questions similar to the ones from the Homework. It should be emphasized that mathematics students are also required to take this exam. Grading will solely be based on the exam. Testat is given to those students who take this exam. The details will be announced in the lecture.

★ Submission of your solutions

You are invited to submit your solutions of the homework exercises. They are usually collected during the break of the lecture (approximately 11:00–11:10). The due date will be put on each exercise sheet, usually one week after the exercise sheet is distributed. Submitted solutions are supposed to be written in English (or Hungarian, Serbian if you like).

We do not require, but highly recommend that you try to solve all the homework exercises and if you do so, write them up. Writing up teaches you to precisely formulate your (maybe vague) ideas and communicate them so that others can understand them. This ability is beneficial not just in mathematics but in (almost) all disciplines. Whatever you write up we will read and comment on. Another reason to struggle with the homework problems is to prepare yourself for the final exam.

★ Tips for the exercises

The exercises are sampled from the Textbook. The Textbook says that the designations on exercises have the following meaning:

"(−)" = easier or shorter than most,
"(+)" = harder or longer than most,
"(!)" = particularly useful or instructive,
"(∗)" = involves concepts marked optional in the text.

In the exercise class, we hardly have enough time to discuss all of the exercises. Therefore, we will pick only a few of them for the discussion. The participants are expected to present their solutions voluntarily and to join the active discussion.

The questions are always welcome. In particular, in case you have no idea of how to solve a problem, we can provide you with some hints.