

DM201: Graph algorithms with applications — Ugeseddel 1

Welcome to DM201!

Litterature

(BG): "Digraphs: Theory, Algorithms and Applications", J. Bang-Jensen and G. Gutin, Springer Verlag, London, October 2000. It can be downloaded as a PDF file from <http://www.cs.rhul.ac.uk/books/dbook/main.pdf>

(J): Graphs, Networks and Algorithms, D. Jungnickel Springer Verlag, 3rd edition, 2007

Exam Oral exam on June 9. In order to take the exam you must have solved the obligatory assignment(s).

Important information:

- Classes are tuesdays 8-10 and thursdays 14-16. We start on January 29. There is an error in the schedule on the web: the thursday class is in each of the following weeks 5-9, 11, 15-17, 19-21.
- The weekly note will be available each thursday after the classes. It will contain the following information.
 - What material has been covered since the last weekly note.
 - Material for the next week including exercises.

January 29, 2008: We will recall basic structures in graphs and digraphs and look at hamiltonian paths and cycles in special classes of digraphs (including tournaments), euler tours in (di)graphs, strong orientations of graphs, the 2-SAT problem etc.

The material for this is (BG) pages 13-22 and 28-38 plus (J) pages 13-20 and 25-28. You should however pass through most of Chapter 1 in both (BG) and (J) to familiarize yourself with what is there.

January 31, 2008:

- Longest paths in acyclic digraphs with an application to project scheduling. (J) pages 72-76.
- Train schedules (J) pages 81-84.
- The Bellmann-Ford algorithm (BG) 55-58.
- Polynomially searchable neighbourhoods for TSP (BG) 82-85.