

## DM69 — Lecture 15

This week we will have two lectures and next week we will have two problem sessions.

### Lecture 15 — May 18

- Parallel algorithms (Atallah 47.1–47.5).

### Lecture 16 — May 20

- Sorting networks (Cormen Chapter 27).

### Signing up for the exam

Remember to put your name on the sign up sheet at the secretariat if you have not already done so.

### Exam questions

For the material we have covered so far, the following are the possible main questions.

1. Shortest paths in weighted graphs
2. The maximum  $(s, t)$ -flow problem and the minimum  $(s, t)$ -flow problem
3. Polynomial algorithms for maximum flows
4. Minimum cost flows
5. Matchings: characterizations and algorithms
6. The primal-dual algorithm for the transportation and the assignment problem
7. The RSA cryptosystem
8. Matroids and the greedy algorithm
9. Matroid intersection and partitioning
10. Scheduling: basic concepts and examples of proofs

## **The exam**

You will draw one of the 12 exam questions; this will be your “main question”. After drawing your main question you have 30 minutes for preparation.

The exam itself will take about 25 minutes:

You should talk about the main question for about 15 minutes. Note that 15 minutes is a fairly short time, and you should make sure to cover the most important things. After the main question, we will ask questions relating to other parts of the curriculum for about 10 minutes.

Remember that exercises posed during the semester are part of the curriculum. But you will not be asked about the details of an exercise, only the conclusion or the main idea.

You are welcome to bring books and notes for the preparation, but at the examination we will only allow a short outline without details or definitions.