

## DM515: Introduction to Linear and Integer Programming — Ugeseddel 1

### Welcome to DM515!

**Why English?** The weekly notes will be in English in order to allow potential guest students to read it also. Hvis der er noget som I ikke forstår, så spørg endelig.

**Teacher and instructor** The lectures will be given by Jørgen Bang-Jensen and the exercise classes by Ph.D student Alessandro maddaloni.

### Literature

**(MG):** J. Matousek and B. Gärtner: Understanding and using Linear Programming, Springer Verlag, Berlin 2007. This is the course book. It is available in the bookstore. Please buy it and bring it to the lectures. **I will assume that everyone has the book in from of him/her at each lecture.**

**(BG):** J. Bang-Jensen and G. Gutin, Digraphs: Theory, Algorithms and Applications, Springer Verlag, London, October 2000. We will use parts of Chapter 3. The whole book can be downloaded from <http://www.cs.rhul.ac.uk/books/dbook/>

**(G):** G. Gutin, Computational Optimization, Course notes, Department of Computer Science, Royal Holloway, University of London, 2008. These notes are available from the course page.

**(CL):** J. Clausen and J. Larsen, Supplementary notes to networks and integer programming, Department of management engineering, DTU, 2009. These notes are available from the course page.

**Exam** Written exam (4 hours) on June 6.

**Course schedule:** See the faculty web pages. We start on April 4 at 12.15 in U20.

**Week 14:** There will be 3 lectures and no exercises this week. This is to get us started and allow you time to learn theory before doing the exercises. In week 15 there are two exercise classes and one lecture and in week 16 there will be exercises monday 12-14 instead of the lecture. The classes in week 14 are:

- Monday April 4 12-14 in U20: Modelling, LP, IP, classical problems (flow, matching, cutting stock, TSP, assignment problem, etc. Graphical solution of an LP. (MG) Chapter 1, (G) Chapter 2.
- Tuesday, April 5 8-10 in U49: (this is the main lecture time) Linear programming examples (MG) Chapter 2.
- Wednesday April 6 8-10 in 140 : Integer programming and LP relaxation. (MG) Chapter 3.

The material for this is (MG) pages 1-40.