

DM553 – Complexity and Computability – 2018

Lecture 17

Announcement

IMADA has just announced TA positions for fall 2018. Everyone interested is encouraged to apply. Having to explain the course material to fellow students is a very good way of enhancing ones own understanding. This does not only apply to the material you are responsible for (and thus should understand very well), but through having to explain stuff to others, you get better at identifying the core of problems and hence become a better student yourself.

The deadline for application is May 11 and the announcement can be seen posted at IMADA and also on the SDU webpages for open positions

https://www.sdu.dk/da/service/ledige_stillinger/974985

You are welcome to contact Jørgen Bang-Jensen (Computer Science) or Kristian Debrabant (Mathematics) if you have any questions.

Lecture, May 1

We continued approximation algorithms from chapter 35 of CLRS, covering sections 35.1 and 35.2 of CLRS and introducing section 35.3.

Lecture, May 2

We will cover sections 35.3 and 35.5 from chapter 35. We may also cover approximation algorithms for weighted vertex cover using linear programming and CNF-SAT using randomized rounding from section 35.4.

Lecture, May 9

We will finish section 35.4, and we will introduce some heuristics for NP-hard problems.

Lecture, May 11

Class cancelled due to holiday.

Problems to be discussed on May 16

Do the following problems in CLRS:

1. 35.3-1, 35.3-2, 35.3-5 (consider the central binomial coefficient).
2. 35.5-1, 35.5-2, 35.5-3 (uses calculus), 35.5-4.
3. 35-1. (For part (a), you might consider reducing from the set-partition problem which is defined in exercise 34.5-5. Note that First-Fit actually has an approximation ration better than 2, but that result is harder to prove.)