

DM19 – Algorithms and Complexity E05 – Lecture 11

Lecture, November 16

We finished NP-completeness and began on approximation algorithms from chapter 35 in the textbook, covering the introduction and section 35.2.1.

Lecture, November 23

We will continue with approximation algorithms from chapter 35 in the textbook, probably finishing through section 35.3 and also covering section 35.5.

Lecture, November 30

We will finish with approximation algorithms from chapter 35 in the textbook (section 35.4, especially Theorem 35.6) and randomized rounding for MAX-SAT from the notes from Motwani and Raghavan's book *Randomized Algorithms*. We will also begin on branch-and-bound from the notes by Jens Clausen.

Problems to be discussed in week 48

1. 35.1-1, 35.1-3, 35.1-4, 35.1-5.
2. Explain how to make the approximation algorithm given for vertex cover on page 1025 run in time $O(|E|)$.
3. 35.3-5.
4. 35.5-2, 35.5-3, 35.-4.
5. 35-1. (For part a of 35-1, you might consider reducing from the set-partition problem which is defined in exercise 34.5-5.)