DD2440 Advanced Algorithms 6.0 credits

Avancerade algoritmer

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for DD2440 valid from Autumn 2018

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering, Information Technology, Information and Communication Technology

Specific prerequisites

Algorithms and complexity corresponding to one of the courses DD1352, DD2350, DD2352.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course, the student should be able to

- explain different advanced algorithmic concepts such as randomized algorithms, approximation algorithms, fixed-parameter algorithms
- analyze, select, use, and verify algorithms that are based on the above concepts,
- develop efficient algorithms that are based on the above concepts,
- independently explore existing advanced algorithms, implement them, and improve them using heuristics,
- communicate algorithmic ideas in a clear, formal way

in order to

- construct and evaluate computer programs that use computer resources efficiently.

Course contents

The course will describe and analyze a number of algorithms for combinatorial computational problems.

Algorithmic concepts: Randomized algorithms, approximation algorithms, fixed-parameter algorithms.

Course literature

Will be announced at least 4 weeks before the start of the course on the course web.

Examination

- ÖVN1 - Exercise, 6.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

In this course, the code of honor of the school is applied, see: http://www.kth.se/en/csc/utbildning/hederskodex

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.