



DD2358 Introduction to High Performance Computing 7.5 credits

Introduktion till högprestandaberäkningar

Course syllabus for DD2358 valid from Autumn 16

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

Grading scale: A, B, C, D, E, FX, F

Education cycle: Second cycle

Main field of study: Computer Science and Engineering

Intended learning outcomes

The aim of the course is to give an introduction to skills that are necessary for anyone who should use high performance computers in own projects.

On completion of the course, you should have learnt to

• analyse a given problem to find possibilities for parallelisation

• choose algorithms and hardware to solve computationally intensive problems

• program computers with shared and distributed memory

• efficiently use appropriate programming languages for scientific computations

• run parallel programs on different hardware architectures and software environments

• estimate the performance in different implementations

• optimise the performance of programs.

Course main content

Computer architecture, efficient programming for scientific computations, parallel algorithms, message passing, OpenMP, visualisation, storing of large amounts of data, GRID computing, tools for high performance computing.

Introduction to the hardware and the software at CSC and PDC on different platforms.

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

Literature

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

Examination

- LAB1 - Laboratory Assignments, 3.0 credits, grading scale: P, F
- LAB2 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F