



# DD2358 Introduktion till högprestandaberäkningar

## 7,5 hp

### Introduction to High Performance Computing

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Kursplan för DD2358 gäller från och med HT17

**Betygsskala:** A, B, C, D, E, FX, F

**Utbildningsnivå:** Avancerad nivå

**Huvudområde:** Datalogi och datateknik

### Lärandemål

The goal of the course is to provide an introduction to the skills that are necessary for those who will use powerful computers in their own projects.

After completing the course you have learned to

- analyze a given problem to find opportunities for parallelization
- selecting algorithms and hardware to solve computationally intensive problems
- program computers with shared and distributed memory
- effectively use the appropriate programming language for Scientific Calculations
- run parallel programs on different hardware architectures and software environments
- estimate the performance of different implementations
- optimize the performance of programs.

### Kursens huvudsakliga innehåll

Computer architecture, efficient programming for scientific computing, parallel algorithms, message fit, OpenMP, visualization, storage of large amounts of data, GRID calculations, tools for high performance computing.

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

### Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

### Behörighet

### Litteratur

Will be announced on the course web page at least 4 weeks before the course starts.

## Examination

- LAB1 - Laborationsuppgifter, 3,0 hp, betygsskala: P, F
- LAB2 - Projektuppgift, 4,5 hp, betygsskala: A, B, C, D, E, FX, F