Nonlinear Optimization, Equations and Least Squares, 9.0 credits

Olinjär optimering, ekvationer och minsta kvadratmetoder, 9.0 hp

Third-cycle education course

6FMAI07

Dept of Mathematics

Valid from: First half-year 2023

Approved by
Head of Department

Approved

Registration number

Entry requirements

Basic calculus, numerical linear algebra and optimization. Any gap in the background can be closed by students at the beginning of the course by intensive self-study with a help of the lecturer.

Specific information

This course has been recommended by LiTH FoFu-nämnden as a "Fakultetsgemensam forskarutbildningskurs".

Contents

Unconstrained optimization, constrained optimization, systems of simultaneous nonlinear equations, nonlinear least squares. Students will get acquaintance with the most effective numerical methods, many of which have been developed only in recent years.

Educational methods

One lecture a week. Each topic is covered twice - first by the lecturer, then at the next meeting by a couple of students. Their presentation is followed by discussions.

Examination

Active participation (at least 85% attendance), presentation of the course topics.

Grading

Two-grade scale

Course literature

Jorge Nocedal and Stephen J. Wright: *Numerical Optimization*, Springer, 2nd ed., 2006.