SF2822 Applied Nonlinear Optimization 7.5 credits
Tillämpad ickelinjär optimering

Course syllabus for SF2822 valid from Spring 11

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:** Mathematics

**Intended learning outcomes**
To deepen and broaden the student's theoretical and methodological knowledge in nonlinear programming.
To give training in the art of modeling and solving practical problems, and in presenting the results.

**Course main content**
Theory and methods:


Projects:
This part of the course consists of modeling practical optimization problems and using available optimization software to solve them. The projects are carried out in small groups. An important aspect of the course is cooperation within the group as well as presentations in talking and in writing.

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

**Eligibility**
In general:

150 university credits (hp) including 28 hp in Mathematics, 6 hp in Mathematical Statistics and 6 hp in Optimization. Documented proficiency in English corresponding to English B.

More precisely for KTH students:

Passed courses in calculus, linear algebra, differential equations, mathematical statistics, numerical analysis, optimization. A passed second course in numerical analysis is an advantage.

**Literature**
To be announced at the beginning of the course. Preliminary literature:
Linear and Nonlinear Programming by S.G.Nash och A.Sofer, McGraw-Hill, and some material from the department.

**Examination**

- PRO1 - Project, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

**Requirements for final grade**

A written exam (TEN1; 4.5 hp).
Projects (PRO1; 3 hp).