

# SF2822 - Applied nonlinear optimization

## Plan for exercise sessions, spring 2016

In general, in the beginning of each exercise sessions there will be a recap of the theory part covered in the lectures.

### **Exercise session 1: Convexity and optimality conditions.**

**In class:** 1.10 a), an exercise similar to 1.1.

**Recommended:** 1.1, 1.3, 1.11

### **Exercise session 2: Unconstrained optimization.**

**In class:** 2.2 b)

**Recommended:** 2.2 a) and/or c), 2.3.

### **Exercise session 3: Equality-constrained quadratic programming.**

**In class:** An exercise similar to 3.6 a) & b), an exercise similar to 4.7.

**Recommended:** 3.6, 3.3.

### **Exercise session 4: Inequality-constrained quadratic programming - Active-set & Interior point method.**

**In class:** An exercise similar to 4.7, 6.1.

**Recommended:** 4.7, 4.8, 6.7.

### **Exercise session 5: Sequential quadratic programming.**

**In class:** An exercise similar to 5.5, an exercise similar to 6.7, Ex. 4 on Exam 2004-04-23.

**Recommended:** 5.5, 5.12.

### **Exercise session 6: Interior methods for nonlinear programming.**

**In class:** 6.2, 6.4

**Recommended:** 6.6, Ex. 3 on Exam 2011-05-28.

### **Exercise session 7: Semidefinite programming.**

**In class:** 7.1 a) & b), an exercise similar to Ex. 5 on Exam 2012-06-02

**Recommended:** 7.3, 7.6, 7.2.

### **Exercise session 8: Overview of the whole course.**

**In class:** Recap of theory/concepts in the course, and parts of an old exam (probably Exam 2012-06-02)

**Recommended:** -