FMA051 Optimisation 2008

Course homepage:
http://www.maths.lth.se/matematiklth/personal/ah/Opt/Opt08.html

Department homepage:
http://www.maths.lth.se/matematiklth/vitalhyllan/

The aim of the course is to present basic optimisation theory, and to give an overview of the most important methods and their practical use. See also the official syllabus, available on the homepage.

Teachers:
Anders Holst, room MH:347, tel 046-222 3405, ah@maths.lth.se

Carl Olsson, room MH:435, tel 046-222 8565, calle@maths.lth.se

Literature:

If you are unfamiliar with Matlab, which is used in the labs and in the assignment, there are tutorials available online—see the link Basic Course Info on the home page. Alternatively, you may buy the handbook

Lectures:
Mondays and Wednesdays at 8.15 in MA:5 (Anders Holst).

Problem solving classes:
Tuesdays at 15.15 in E:0522 (Anders Holst) and E:1409 (Carl Olsson).
Students belonging to the I programme whose family names begin with the letters H–Ö should go to E:1409, all others to E:0522. If necessary we will switch to some other rule.

Problem solving seminars:
The last four Fridays before the exam (26/9, 3/10, 10/10 and 17/10) at 15.15 in MA:5 (Anders Holst).

Course assessement:
In order to pass the course one should have 1) passed the computer exercise classes, see below, 2) passed the written examination, see below, and 3) carried out one of the MATLAB-assignments, see below, and had produced an approved written report by November 21. If you have passed, your mark for the course will equal your mark on the written exam.

Computer laboratory exercise classes:
There will be two compulsory labs, the first one in the fourth week and the second one in the sixth week. The times available are Mo 13–15, Thu 8–10 and Thu 15–17. Lists on which you can sign up will appear on the department’s notice board on the ground floor of the Mathematics building in the week before the labs. Please
make sure in advance that you have a proper login and password. Those who do not should contact the lecturer as soon as possible.

Instructions for the computer exercises, and some Matlab-functions that are needed, are available on the Course homepage. You should have read the instructions before the lab, and completed the preparatory exercises. Failure to do so may result in your not being allowed to participate in the lab on that occasion.

You may run the computer exercises at home beforehand, but you will still have to demonstrate what you did for the tutor at the lab in order to be registered as having passed.

**Written examination:**
The written examination, on Tuesday October 21, 14.00–19.00, in MA:9, will contain both problems and theoretical questions. On the course homepage there is a set of old written examinations available, and also a list of possible theoretical questions. When doing the exam, one may use a formula sheet (available on the home page) and a pocket calculator.

There are 6 questions (often consisting of several parts), each of which is worth 1 point. Partially correct solutions/answers may give fractional points. In order to pass one has to obtain a total score of at least 3.0, in which case the mark is the integer part of the score (but no more than 5).

For those who fail the exam there is another chance on Friday January 9, 8.00–13.00.

**Assignment:**
The assignment involves 1) writing a small Matlab-program to implement an optimisation algorithm, 2) using the program to investigate some properties of the algorithm, and 3) writing a report. The report must be approved by November 21. Note that the first version may have to be partially rewritten, so you should hand in your first version considerably earlier.

You may choose between two different assignments. Instructions are available on the course homepage.

It is recommended that you discuss the assignment with your fellow students, but the report should be written individually. Hence it should be handwritten.

**Departmental Office (Studerandeexpeditionen):**
This is located in room MH540, and should be open 10.00–12.15, 14.00–15.00 and 15.30–16.30. Secretaries are Ann-Margret Svensson (email ams@maths.lth.se) and Karin Nordgaard (karin@maths.lth.se).