



KTH Engineering Sciences

SD1105 MATLAB

MATLAB is an interactive program library for numerical computation and visualisation. MATLAB has become a standard tool in research and engineering, and is used in many courses at KTH.

The course aims to provide general understanding of MATLAB as a programming language and give necessary experience for courses using MATLAB as a learning tool.

Students graduating from the course shall be able to, starting from a given technical situation and given mathematical formulas, to plan, program, present and defend a solution to a mechanical problem using MATLAB.

Implementation

The course is a self-study course. You work with the course material and MATLAB either at a KTH computer room or at home. You can download MATLAB at KTH ProgDist (<http://progdist.ug.kth.se>).

There are no scheduled lectures or labs, but tutor support is provided, when needed, by e-mail or in classroom.

Examination

The course is assessed by individual presentation of a programming task. In order to receive your programming task you need to contact the course co-ordinator for an appointment. You will get your examination assignment after you have passed a short qualification test.

As soon as you are finished with your programming task, you may contact your advisor and agree upon a suitable time and place for presenting your results.

The presentation will take between 20 and 30 minutes. To be allowed to make such a presentation, you must first e-mail your m-file to your advisor at least two working days in advance of the appointed time. You will then receive a confirmation from your advisor that you are cleared to make the presentation. Otherwise, you will receive feedback on what improvements are first required, and may resubmit an updated solution at a later date. The m-file is archived for comparison to other solutions.

Your presentation will make use of a computer. What the advisor wants to see is:

- that you have solved the problem,
- that you are capable of making modifications to your program that the advisor requests.

Course material

Compendium "An Introduction to MATLAB"

by David F Griffiths at the Dept of Mathematics, The University of Dundee. With additional material by Ulf Carlsson, KTH.

Collection of exercises "Miscellaneous exercises in MATLAB"

Written mainly by Ulf Carlsson, some exercises contributed by other KTH teachers.

The compendium "*An Introduction to MATLAB*" is the main course literature. It contains examples you can repeat with the computer. The compendium is concise and can be read through quickly. Although MATLAB is quite easy to use, you need still spend some time to become familiar with the MATLAB interface and syntax.

The collection of exercises "*Miscellaneous exercises in MATLAB*" contains more than 70 examples to work with. Especially *recommended* are exercises:

1, 2, 4-6, 8, 9, 12, 13, 15-20, 27, 29, 31, 34-36, 38-42, 44, 47, 49, 50, 52, 53, 56, 58, 61, 63, 66-68.

Many of the recommended exercises contain programming ideas that might be useful in the final programming task. Thus, your work with those exercises should provide good help in the examination assignment.

Teachers

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