



EQ2430 Project Course in Signal Processing and Digital Communication 12.0 credits

Projektkurs i signalbehandling och digital kommunikation

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for EQ2430 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

Individual admission by course responsible

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The student shall be to collaborate in team in solving when solving a technical problem and be able to apply the theoretical knowledge acquired in previous courses. The student shall also be able to document and present the work.

In addition the students shall also be able to do

- Simpler forms of DSP-programming, and/or
- simpler forms of PC-programming, and/or
- simpler forms of practical project management, an/or
- practical algorithm development

Course contents

A group of 4-7 students will carry out a project with the goal to produce a prototype before a certain deadline, that fulfils a given performance specification. The students are responsible for partitioning the projects into subprojects, make a time table, distribute the workload, and decide by whom they should be solved. There are several solutions to the problems. During the course, the students will face many practical problems that must be solved. An objective with this course is to give training in how to acquire knowledge in order to make the "correct" design decisions. The students will thereby learn how to acquire the theoretical and practical knowledge needed for the assigned project. An oral presentation and demonstration will take place before the project deadline. Written documentation should be produced while working on the project. The course concludes with an oral presentation and demonstration of the prototype. The requirements on the oral and written presentations are similar to the requirements on a Master's seminar and thesis.

Every student will focus on one of the areas of DSP-programming, PC-programming, project management or algorithm development. Support in the form of lectures, literature and on-line information is available for all these areas.

Course literature

The course literature will be published on the course homepage at least four weeks before the start of the course. In addition to this there will project specific course literature. During the 2007 edition of the course the following materials were used:

- Texas Instruments Manuals (http://www.ti.com/sc/docs/psheets/man_dsp.htm)
- Code Composer Studio on-line help.
- Matlab on-line information.
- On-line DSP support <http://www.s3.kth.se/signal/edu/projekt/DSPsupport/>

- On-line information on project management <http://www.s3.kth.se/signal/edu/projekt/examination.shtml>
- Sams Teach Yourself Visual C++ 6 in 21 Days, Davis Chapman and Jeff Heaton, Sams Publishing 1999.
- The C Programming Language (Second Edition), Brian W. Kernighan and Dennis M. Ritchie.
- Digital Signal Processing Implementation using the TMS320C6000 DSP Platform, Naim Dahnoun, Prentice Hall 2000.
- Lecture notes

Examination

- PRO1 - Project, 12.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

If the prototype is successful, the final-report is well written and contains adequate analysis and all the other deliverables are in good shape then all members who have made significant contributions will receive the highest grade. If this is not the case the achievements of the individual group members will be scrutinized. This can be done by examining the progress-reports and other documents produced and from observations done during the course of the project.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.