



HE1012 Mechatronics 2, Project

7.5 credits

Mekatronik 2, projektkurs

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

Establishment

Course syllabus for HE1012 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Electrical Engineering, Technology

Specific prerequisites

Good knowledge in C programming, microcomputer systems, and project oriented methods.

Language of instruction

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

Intended learning outcomes

The aim is to provide you with specialised knowledge about Mechatronics systems and develop your skills in designing functional prototype from given ideas.

After passing the course you should be able to:

- Use professional methods common to engineers. This means to balance the work between theory and practise: analyse, evaluate and implement.
- Make a specification in detail of the requirements from oral or written information.
- Find appropriate modules of the designing task in order to let the members of the project group work concurrently.
- Design a prototype that fulfils the requirements.
- Apply your knowledge in control system and mathematics. This consists of making a model of the system and then translating it to instructions in a program.
- Apply and improve your knowledge about microprocessors. This involves your ability to describe possibilities and limitations of the chosen hardware.
- Apply your knowledge within analogue and digital electronics. This involves your ability to design interfaces between sensors/actuators and the microcontroller.
- Select the most suitable electrical components depending of the given conditions.
- Present solutions to the problem in a written report.
- Perform an oral presentation.

Course contents

- Microprocessor programming
- Design of a Mechatronics system that fulfils a given specification
- Monitor and control a system by suitable control systems
- Investigation of possible solutions with respect to realization, quality, cost, and design
- Documentation and how to make a follow up of the requirements

Course literature

No extra literature

Examination

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

Passed project report and oral presentation (PRO1; 3 cr.), grading A-F.

Passed prototype (PRO2; 4.5 cr.), grading A-F.

The final grade is based on the two parts. Grading A-F.

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.