



HE1007 Mechatronics 7.5 credits

Mekatronik

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

Establishment

Course syllabus for HE1007 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 basic knowledge about Mechatronics systems and develop your skills in designing functional prototype from given ideas.

Furthermore, to strengthen your knowledge within the electrical field and practise working on a project

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 of the requirements from oral or written information.
- Divide the designing task in smaller tasks, which will be solved individually or together in the group.
- Design a prototype that fulfils the requirements.
- Apply your knowledge about microprocessors. This involves your ability to describe possibilities and limitations of the chosen hardware.
- Apply your knowledge within digital electronics. This involves your ability to design a small interface between sensor/actuator and the microcontroller to control the mechanical system by on-off controlling.
- Present solutions to the problem in a written report.
- Perform an oral presentation.

Course contents

- Microprocessor programming
- Mechanical parts
- Design of a Mechatronics system that fulfils a given specification
- Monitor and control a system by digital signals
- 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

- PRO2 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 3.0 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

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.