MG2032 Automation Technology, Advanced Course 1 6.0 credits

Automatiseringsteknik, fortsättningskurs 1

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

Establishment

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

MG1002 Automation technology, or the equivalent.

including documented proficiency in Swedish B and English B or the equivalent

Language of instruction

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

Intended learning outcomes

After passing the course, the student will be able to:

- describe how equipment and methods are structured and organised according to standards.
- describe in a structured way how a automation problem is formulated.
- write a PLC-program according to the description of the automation problem.
- design and implements a supervise system.
- describe basic industrial data communication.
- design a basic interface against Internet that creates possibility for information transfer of process status.
- describe the most common sensors and actuators.
- describe common used equipment used in assembly technology.
- describe possibilities using escort memory, for example RFID.
- describe different types of robot system and the equipment used according to the system.
- describe different types of feeding systems.
- write a robot program for a robot equipped with vision system.
- design a supervise program for the FMS-system st the Department.
- describe the principles of assembly and the design of details affecting the possibilities of an automated assembly.

Course contents

The course covers the subjects of:

- Development of automation technology.
- Development of PLC technology and the use of the technique.
- Sensors and actuators used in manufactoring industry.
- Assembly technology.
- Robot system.
- Feeder technique.
- Join technique used within Assembly technology
- Assembly technology in alignment to DFA.

Course literature

Kompendium, säljs på kursexpeditionen.

Examination

- INLA - Homework Exercises, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TENA - Written Examination, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Laboratory Exercises, 2.0 credits, grading scale: P, 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.

To pass the written examination, 50% of the maximum number of points is required.

Other requirements for final grade

Approved assignments (INLA; 2 cr)

Approved laboratory exercises (LABA; 2 cr)

Passed written examination (TENA; 2 cr)

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.