



MG1220 Automation 7.5 credits

Automation

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

Establishment

The official course syllabus is valid from the spring semester 2027 as decided by the Faculty Board decision HS-2025-2592. Date of decision: 2025-10-08.

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Course in Electrical and Control Engineering completed

Intended learning outcomes

After completing the course, students should be able to:

1. Define concepts and describe the functions and properties of components used in automation
2. Explain general principles, methods, and equipment for control and automation—how they work, how they are used and programmed, including industrial robots

3. Describe the sequence of events in manufacturing equipment in a systematic manner, develop logical solutions and control graphs, and prepare appropriate PLC programs
4. Select suitable components for the application in question, such as actuators, sensors, control systems, and industrial communication equipment
5. Design, program, and commission simple automated facilities where processing, material handling, assembly, coordination, and monitoring are included in the control tasks
6. Analyze a non-functioning solution and propose measures

Course contents

Fundamentals of automation technology

Description of automation technology processes

PLC technology

Sensors and actuators used in the manufacturing industry

Introduction to assembly technology – feeders, joining, DFA

Use of robots

Material handling

Examination

- TEN1 - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory work, 3.0 credits, grading scale: P, F
- INL1 - Assignment, 1.5 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.

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.