



# MF2095 Programming in C for Embedded Systems 3.0 credits

Programmering i C för inbyggda styrsystem

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

## Establishment

On 2025-04-15, the Head of the ITM School has decided to establish this official course syllabus to apply from autumn semester HT2025: registration number HS-2025-0903

## Grading scale

P, F

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

Completed course MF1016 Basic Electrical Engineering, or the equivalent.

Completed course DD1321 Applied Programming and Computer Science, 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 should be able to:

1. Explain the structure of embedded processors
2. Design and develop sequential programmes in C relevant for mechatronic product development, especially with external units such as A/D-converters, PWM, interrupt handling
3. Apply development tools for programming and troubleshooting of embedded systems

## Course contents

- Computer models, von Neumann and Harvard architecture, CISC and RISC
- Low level programming in C
- Peripherals such as A/D-converters, PWM (Pulse Width Modulation), I2C (Inter-Integrated Circuits), SPI (Serial Peripheral Interfaces). Interrupt handling

## Examination

- LABA - Laboration, 3.0 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.

## 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.