



# MF2103 Embedded Systems for Mechatronics 9.0 credits

Inbyggda system för mekatronik

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

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

On 2020-10-01, the Head of School of ITM has decided to establish this official course syllabus to apply from the spring semester 2021 (registration number M-2020-1759).

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

Degree of Bachelor Science or the equivalent.

- Completed course MF2095 Programming in C, or equivalent.
- Completed course MF1016 Electrical engineering, or equivalent

- Completed course DD1320/DD1321 Applied programming and computer science, or 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 students should be able to:

1. Give example of embedded systems and their applications and describe the special requirements that are set to develop such systems.
2. Be able to use modern integrated development environments for micro-controller/processor programming and their functionality for testing and troubleshooting.
3. Explain the structure of control circuits and built-in processors
4. Develop micro-controller programs for mechatronic applications including the use of I/O and external units.
5. Apply knowledge in programming, and to a lesser extent in digital technology and automatic control, in the design and realization of control software on distributed embedded systems.
6. Describe, explain and use software platforms, specific real-time operating systems (RTOS) and network protocols

## Course contents

### Examination

- LAB3 - Laboration, 5.0 credits, grading scale: P, F
- TEN2 - Written examination, 4.0 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.

### 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.

