



# El2402 Electromagnetic compatibility 7.5 credits

Elektromagnetisk förenlighet

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

The official course syllabus is valid from the autumn semester 2023 in accordance with the decision by the Head of School: J-2023-0444. Date of decision: 09/03/2023

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Electrical Engineering

## Specific prerequisites

Knowledge in electromagnetism, 6 higher education credits, equivalent completed course EI1228.

## 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

- analyse electrical systems by means of models that describe non-ideal properties of electrical components
- apply the zoning concept on electrical systems
- analyse crosstalk in multi-conductor systems
- design efficient surge protection and filters
- design efficient shielding
- explain typical construction errors within the scope of the course.

## Course contents

The course covers, how electromagnetic disturbances arise and propagate in electrical systems, thereby influencing the constituent components and methods to reduce the disturbances.

Measurements in EMC (electromagnetic compatibility). Frequency dependence of electrical components. Conducted disturbances. Radiation from wires and apertures. Crosstalk between transmission lines. Shielding of electric and magnetic fields. Grounding. Laboratory work.

## Examination

- LAB1 - Laboratory Work, 3.5 credits, grading scale: P, F
- TEN1 - Written Exam, 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.