# EN1020 Project Course in Electrical Engineering, part II 6.0 credits

**Elektroprojekt, del II**

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 2021 in accordance with head of school decision: J-2021-0650.Decision date: 15/04/2021

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Language of instruction

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

## Intended learning outcomes

After the course, the students should be able to:

- plan and carry out a project.
- tackle a problem from a system perspective by designing, building and improving a product, using knowledge gained from other courses in the programme. This requires ability to evaluate and make simplifications that reduce the problem to an elementarily computable complexity.
- describe the requirements of a product by creating a simple specification.
- independently and also working with a team, be able to formulate, evaluate and choose a technical solution for a given problem.
- make a design that fulfills the requirements of the specification by applying knowledge from earlier courses but also by searching for new knowledge where it is necessary.
- build a product based on one's own design, ensure that the product functions and, when necessary, make improvements.
- understand that there are various ethical perspectives to bear in mind in all forms of product development.
- document and communicate technical results orally and in writing, creating both a report and a poster.
- reflect on, evaluate and critically review one's own and others' technical solutions.

## Course contents

The course EN1020 is a project course that connects several key courses in the programme Electrical engineering such as Theoretical electrical engineering, Time continuous signals and systems, Discrete-time signals and systems, Classical physics, mechanics and waves and a future course in measuring techniques. Special focus is on building further on the course Project in Electrical Engineering from the first year of the programme, but knowledge from several of the parallel courses in the second year is also useful . During the course, a project is carried out that primarily gives the students a system perspective on a particular question. The intention is that students take a project through all stages in a product's development, from defining the requirements for a product, designing it, implementing the design and finally to stay with the design chosen, improving the product without changing the design.

An initial lecture about models is presented, and after that, a number of presentation sessions will be included in the course, as well as a role-play session, where the students acquaint themselves with the ethical problems an engineer may meet in connection with product development, when products can be used for various purposes.

## Specific prerequisites

Completed project work, 7.5 higher education credits, equivalent to completed course EH1010.

Knowledge in electrical circuit analysis, 9 higher education credits, equivalent to completed course EI1110.

Active participation in a course offering where the final examination is not yet reported in LADOK is considered equivalent to completion of the course.

Registering for a course is counted as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

## Examination

- INL1 - Assignment - Design, 1.0 credits, grading scale: P, F
- INL2 - Assignment - Report, 1.5 credits, grading scale: P, F
- INL3 - Assignment - Per review, 0.5 credits, grading scale: P, F
- PRO1 - Projekt, 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.

## Other requirements for final grade

See description of course

## 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.

## Additional regulations

A student, who at the beginning of the course does not have knowledge in electromagnetism equivalent to the contents of EI1220 must read EI1220 in parallel with EI1020.