



# EI2433 Electrotechnical Modelling 7.5 credits

## Electrotechnical Modelling

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

## Establishment

Course syllabus for EI2433 valid from Autumn 2011

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Electrical Engineering

## Specific prerequisites

150 university credits (hp) in engineering or natural sciences and documented proficiency in English corresponding to English B.

## Language of instruction

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

## Intended learning outcomes

The course shall give an ability to based on theory develop models that can be used for solving electrotechnical design problems and to understand electrophysical phenomena.

## Course contents

The course begins with a presentation of a number of design problems within the areas electric power engineering, antenna techniques, plasma physics, etc where modelling is an essential tool for design and understanding. The introductory part describes further what a model is and gives an overview of different types of models. Basic modelling techniques are described.

The main part of the course includes 6-8 tasks to be solved in groups. For each task lectures are given that introduces the problem and repeats the theory needed to solve the problem. The task involve that the student formulates the problem and develops a model that can be used to solve it. The model can e.g. be a mathematical description and the equations can be solved analytically or numerically. The model can also be an equivalent circuit which is used for analysis of the problem

The tasks include e.g. electric and magnetic field problems, medical applications, plasmas in space and technical applications.

## Course literature

Compendium in electrotechnical modelling with guidance to the tasks.

## Examination

- INL1 - Assignments, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - 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.

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

## Other requirements for final grade

Approved tasks.  
One written examination.

## 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.