



# El1265 Electromagnetic Theory, Optional Course 3.0 credits

Teoretisk elektroteknik, påbyggnadskurs

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

## Establishment

Course syllabus for El1265 valid from Autumn 2007

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Electrical Engineering, Technology

## Specific prerequisites

## Language of instruction

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

## Intended learning outcomes

In addition to the knowledge acquired from the course 2A1860 Electromagnetism for CL, the students shall

- solve simple electrostatic boundary value problems
- analyse momentum in electromagnetic fields
- analyse propagation in rectangular waveguides
- explain the meaning of retardation
- use Maxwell's to calculate the fields from dynamic charge/current distributions
- calculate the fields from simple antennas and antenna systems

## Course contents

Lectures

Boundary-value problems. Method of images. Radiation and reception of electromagnetic waves Transformation of electric and magnetic fields between systems with uniform velocity.

Exercises:

Problem solving related to the various parts of the course.

## Course literature

Griffiths: Introduction to Electrodynamics, 3:rd ed. Prentice Hall

Petersson: Stationära fenomen (In Swedish)

Petersson: Elektromagnetism (In Swedish)

## Examination

- TEN2 - Examination, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 1.5 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

Two written examinations (TENA; 1,5cr.), (TENB; 1,5cr.).

## 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.