



HL2023 Electro Dynamics and Waves 7.5 credits

Elektrodynamik och vågor

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

Course syllabus for HL2023 valid from Spring 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Medical Engineering

Specific prerequisites

Bachelor's degree in Engineerin Physics, Electrical Engineering, 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 this course you should be able to read and understand technical literature on Fourier optics as well as present the contents of what you have read in English to an audience with a technical background

Course contents

The main contents of the course are the basics of Fourier optics applied to light and electron microscopy. To lay the foundations the course will include an introduction to electrostatics and electrodynamics. From there we will develop the fundamental equations of scalar diffraction theory. A large part of the course will be used for student presentations on selected topics of Fourier optics from book chapters and possibly review papers.

Course literature

Joseph W. Goodman, Introduction to Fourier Optics, 2.ed., McGraw-Hill 1996, ISBN 0-07-024254-2

Harrison H. Barrett, Kyle J. Myers, Foundations of Image Science, Wiley-Interscience 2004, ISBN 0-471-15300-1

Examination

- SEM1 - Seminars, 7.5 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.

oral presentations and class work

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.