SI1110 Physics II 6.0 credits

Fysik 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

Course syllabus for SI1110 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Physics,Technology

Specific prerequisites

As for the BD-programme (The Material design programme).

Language of instruction

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

Intended learning outcomes

The aim of the course is to give

- knowledge of the most important concepts in connection with electric and magnetic fields and mechanical and electromagnetic waves.
- knowledge of theories and models describing fields and waves insight into technical applications.
- training in analyzing, formulating and solving simple problems
- insight into measurement methods and instruments
- training in evaluating and reporting experimental work.

Course contents

Electrostatics: Field strength and potential, Gauss' law, metals and dielectrics, the capacitor, electrostatic energy.
Magnetism: Sources and forces, magnetic materials and circuits, magnetic energy. Technical applications. Induction. Transient variations. Alternating currents. Electrical instruments. Maxwell's equations.
Waves: Fundamental concepts. Mechanical waves and acoustics.
Electromagnetic waves: generation, polarization, interference and diffraction. Technical applications. The laser. Coherence.
Basic geometrical optics.

Course literature

Harris Benson: University Physics ISBN 0-321-20469-7.
Instructions for Laboratory work.

Examination

- INL1 - Assignments, 1.0 credits, grading scale: P, F
- LAB1 - Laboratory Work, 1.0 credits, grading scale: P, 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.

Other requirements for final grade

Written examination (TENA; 4 university credits).
Assignments (INL1; 1 university credits).
Approved laboratory work (LAB1; 1 university credits).

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.