



SK1120 Waves 6.0 credits

Vågrörelselära

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 SK1120 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Physics, 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 student shall be able to:

- evaluate and present physical measurements in text and in diagrams

- solve technical problems, relevant for the program which are related to mechanical and electromagnetic waves
- explain physical problems, conditions and restrictions to cooperation partners with non-technical educations
- understand technical specifications, restrictions and opportunities in media related optics and acoustic equipment.

“Physical” in the text above, means that part of physics that is included in the syllabus (see below).

Course contents

Fundamental wave entities.

Mechanical waves: Intensity, reflection, standing waves, acoustical phenomena and metrology, ultrasonic waves.

Electromagnetic waves: Geometrical optics, polarization, interference and diffraction, coherence. The laser and the laser beam. Optical fibers.

Specific prerequisites

Knowledge in mathematics, equivalent to SF1618 Analytical Methods and Linear Algebra 1. Some knowledge in partial derivatives.

Course literature

On-line material available from the course home page.

Instructions to lab experiments.

Examination

- INL1 - Hand in Assignments, 1.0 credits, grading scale: P, F
- LAB1 - Laboratory Work, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 3.0 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 exam (TEN1; 3 credits, grading scale A-F).

Hand-in assignments (INL1; 1 credits, grading scale P/F).

Passed lab experiments (LAB1; 2 credits, grading scale P/F).

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.