SK1108 Classical physics, mechanics and waves 7.5 credits

Klassisk fysik, mekanik och våg

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

Establishment

The Head of School at the SCI School has decided on 2020-04-24 to set this syllabus to apply from HT2020, diary number: S-2020-0295.

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic and specific requirements for engineering program.

Language of instruction

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

Intended learning outcomes

After completing the course the student should be able to:

- solve technical problems relevant to their program related to classical mechanics, mechanical and electromagnetic waves and optics and assess the reasonableness of the solution.
- use physical measurement methods and instruments, evaluate measurement data and report results and evaluate limitations.

Course contents

Mechanics: Vectors, forces, inertial systems, Newton's laws, work, power, energy, circular motion, center of mass, inertia, particle systems and CG motion, linear fluctuations, harmonics, damped oscillations.

Waves: harmonic and spherical waves, wave propagation, mechanical waves, intensity, reflection, standing waves. Electromagnetic waves, polarization, interference, diffraction, lasers, basic geometrical optics.

Examination

- TEN1 - Examination, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, 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

Written exam and laboratory excercises

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.