ML0025 Physics for Technical Preparatory Year II 18.0 fup

Fysik för basår II

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

Establishment

The official course syllabus is valid from autumn semester 2025 as decided by the Faculty Board: PA-2025-0010. Decision date: 2025-08-27

Grading scale

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

Education cycle

Pre-university level

Specific prerequisites

Intended learning outcomes

Overall goal

The course should promote a scientific view and give an understanding of basic physics concepts and relationships and give a good basis for further studies within physics and technical subjects that are included in the 3- and 5-year engineering programs.

On completion of the course, the student should be able to:

Conduct, describe, analyze and report experiments to investigate the physics phenomena dealt with in the course.

Apply basic physic models and concepts, to identify, analyze and solve physics problems, within the context of the course content, and present the solutions in a structured way.

Course contents

Module A: TENA

Projectile motion, circular motion, electric fields, potential, the capacitor, magnetic fields, induction, alternating current.

Module B: TENB

Mechanical waves, electromagnetic waves, reflection, refraction and interference, oscillatory motion, photoelectric effect, atoms and quantum mechanics, the atomic nucleus and radioactivity, relativistic effects.

Laboratory sessions: LAB1

Includes modules A and B

Examination

- TENB - Written examination, 8.0 fup, grading scale: A, B, C, D, E, FX, F
- TENA - Written examination, 8.0 fup, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 2.0 fup, 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

Final grades are given if all examination parts are approved. The final grade is based on the points in the examination.

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.