



# ML0015 Physics A 9.0 credits

Fysik A /Basårskurs/

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 ML0015 valid from Autumn 2009

## Grading scale

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

## Education cycle

Pre-university level

## Specific prerequisites

Basic qualifications for university studies and Mathematics B from high school or equivalent.

## Language of instruction

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

## Intended learning outcomes

**OVERALL GOALS** This course will provide a scientific perspective and an understanding of essential physical relations, and provide a good basis for further studies in physics and technical subjects which are part of higher education and engineering programs. The course includes a number of mandatory laboratory exercises.

## Course objectives for Physics Course A

Following completion of this course the student will have knowledge of:

- physics methods, key physical concepts, quantities and core models
- mathematical treatment of physical problems by means of quantities, concepts and models light,
- its reflection and refraction, and some applications in this area
- forces and moments, and to harness these concepts
- to describe the state of equilibrium linear motion and solve business problems using formulas and charts
- density, pressure, heat and temperature
- energy principle electric charge, voltage and current, resistance,
- electrical fields, electrical energy, power, and the concept of efficiency
- how to plan and conduct experiments to investigate various physical phenomena or to test a model.
- The student should be able to describe and interpret the experiment results orally and in writing

## Course contents

Physics course A, 7.5 credits: Working methods, density, optics, forces, energy and power, electric charges, voltage and current, thermodynamics, scheduled motion, moment of force, pressure, Archimedes' principle, and force and motion.

Laboratory, 1.5 credits: Includes Physics Course A

## Course literature

HeurekaA!, ISBN 978-91-27-56721-4

HeurekaA!, övningar och problem, ISBN 978-91-27-56723-8

Formler och tabeller ISBN 978-91-27-72279-8

## Examination

- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 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.

In addition it may require approved accounts of oral and / or written by the selected data during the course.  
The final grade is based on all modules with grades A - F

## **Other requirements for final grade**

- Passed written exams (TEN1, 7.5 credits) and (TEN2; 7.5 credits) with grades A - F
- Approved thoroughly conducted laboratory work with computers as an aid (LAB1; 3 credits) with grades fail, pass.

## **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.