



ML0016 Physics B 18.0 credits

Fysik B /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 ML0016 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

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 the Physics B course

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

- mathematical treatment of physical problems by means of quantities.
- concepts and models motion descriptions in two dimensions,
- momentum and impulse and the forces at work in these contexts and magnetic fields,
- induction, mechanical and electro-magnetic waves and their properties
- nature of light
- atomic structure and the linkages between energy levels and atomic spectra ionizing
- radiation, radioactive decay, fission and fusion, and pulp - energy equivalence
- relativistic calculations 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

Module 1: 7.5 credits:

Throwing motion, electric fields, magnetic fields, momentum and momentum, circular motion.

Module 2: 7.5 credits:

Mechanical waves, oscillations, light, induction and electromagnetic waves, photo effect, relativistic effects, nuclear physics, nuclear physics and nuclear radiation.

Laboratory 3hp:

Includes Module 1 and 2.

Course literature

HeurekaB!, ISBN 978-91-27-56722-1

HeurekaB!, övningar och problem, ISBN978-91-27-56724-5

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

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 7.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - 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.