SYLLABUS

Elementary Physics B, Highschool Supplementary Course 11.2 pre-education credits FX002T

Fysik B, gymnasiekomplettering

Course syllabus admitted: Autumn 2011 Sp 2 - Spring 2014 Sp 4

DECISION DATE
2011-10-07

Luleå University of Technology 971 87 Luleå, Sweden
Phone: +46 (0)920 49 10 00 • Corporate Identity: 202100-2841

LULEÅ TEKNISKA UNIVERSITET

Elementary Physics B, Highschool Supplementary Course 11.2 pre-education credits FX002T

Fysik B, gymnasiekomplettering

Pre-university level, FX002T

Education level	Grade scale	Subject	Subject group (SCB)
Pre-university level	U G VG	Fysik	Physics

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Gymnasiets matematik D.

Selection

Examiner

Marta-Lena Antti

Course Aim

The course gives basic knowledge and experimental practise in Physics corresponding to the Physics B course given at the Swedish high school/public upper school. The course provides the necessary background for studies in physics and engineering at the university level.

Contents

Forces and motion: momentum, impulse, elastic collisions, projectile motion (rep), motion in a circle: angular velocity, centripetal acceleration, Vibrations.
Atom and nuclear physics: photons, de Broglie wavelength, the uncertainty principle, atom models, energy levels, emission spectra, absorption spectra, X-rays, nuclides, nuclear radioactivity, fission, fusion, information on particle physics..
Electromagnetism: electric field, electric potential, the oscilloscope, the capacitor, magnetic fields, sources of magnetic fields, magnetic forces, induction, Lenz law, alternating current, alternating-current circuits.
Waves: harmonic oscillation, mechanical waves, superposition principle, periodic waves, standing waves, reflection, refraction, diffraction, interference, diffraction from a slit, multiple slits, the diffraction grating.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
The teaching is given in form of lectures and compulsory laboratory work.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
Possibility to exam the part on atomic and nuclear physics, with active participation on lectures and take-home assignments. Written final exam on the other parts. There can be alternative examination methods.

Remarks

The course is not in credit at the study programmes

Overlap

The course FX002T is equal to MTF505

Literature. Valid from Autumn 2007 Sp 1

Heureka! Fysik B Gymnasieskolan, ISBN 91-27-56722-2
Särtryck: Växelström
Formelsamling: Tabell- och formelsamling för Fysik A och Fysik B, Institutionen för tillämpad fysik, maskin- och materialteknik, LTU
Laborationshandledningar

Course offered by

Department of Engineering Sciences and Mathematics

Items/credits

No items/credits available

Study guidance

http://staff.www.ltu.se/~lassew/AO1/mtf505/mtfxxx.htm

Last revised

by Department of Engineering Sciences and Mathematics 2011-10-07

Syllabus established

The syllabus was established by the Department of Applied Physics and Mechanical Engineering 2007-02-28, and remains valid from autumn 2007.