

t.PHET2 - Physik für Elektrotechnik 2

Person responsible for the course: Ralf Markendorf, mklf
Credits: 4
Valid for: 2011/2012
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Learning objectives:

Tools: Students get familiar with the physical way of thinking and working by means of well-chosen issues from nature and technology. That includes experiments and modeling, analogies and recognition of physical structures. Students are capable of checking results in principle by considering limiting cases, assessing their plausibility, performing estimations and comparing them with empirical values from technology and science.

Knowledge: Students understand the basics of optics and thermodynamics und are able to apply them qualitatively and quantitatively to phenomena from nature and technology.

Course content:

Momentum: Many-particle-systems, total momentum, center of gravity, equation of motion, conservation of momentum, elastic and inelastic collisions

Rotation: Newton's second law in angular momentum, conservation of angular momentum

Geometrical optics: Refraction at a spherical surface: Abbe's invariant, thin lense, lense equation, lateral magnification; thick lense, back focal length, image construction, systems of lenses, aberrations, optical instruments

Thermodynamics: Temperature, ideal gas law, work done by an ideal gas, internal energy, First law of thermodynamics

Previous knowledge:

Module PHEMS1

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14*2
Tutorial/Practicum	14*2
Group teaching	
Block instruction	
Seminar	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

Number	Type	Weighting
1	End of term exam	60%
	Exam during the semester	2 X 20%
	Further assessments	

Language of instruction:

german

Instruction material:

lecture notes on lectures/exercise courses/laboratory

Comments:

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