# t.PHET2 - Physik für Elektrotechnik 2

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| **Person responsible for the course:** | Ralf Markendorf, mklf |
| **Responsible OU:** | |
| **ECTS:** | 4 |
| **Valid for:** | 2012/2013 |
| **Last saved:** | 18.03.2013 16:27 |

## Expertise:

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## Methodological skills:

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## Social skills:

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## Personal skills:

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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 |
| Block instruction | |

**Assessment:**

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

| description | type | form | scope | assessment | weighting |
|---|---|---|---|---|---|
| Performance records during school hours | | | | | |
| Semester end exam | | | | | |

**Language of instruction:**

german

**Instruction material:**

lecture notes on lectures/exercise courses/laboratory

**Additional literature:**

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**Comments:**

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