Level: bachelor

Course title: Optics

Status: obligatory

ECTS: 7

Requirements: none

Learning objectives

Introduction to the basic laws of optics and photometry.

Learning outcomes

Student should develop:

General abilities: following the literature; search and using the Internet.

Specific abilities: adopting the knowledge from optics and understanding the basic laws of photometry as well as ray- and physical optics.

Syllabus

Theoretical instruction

Electromagnetic waves. Light and light sources. Radiometry and photometry. Basic laws of geometrical optics. Dispersion. Applied geometrical optics. Geometrical optics of optical instruments. Wave optics. Interference, diffraction and polarization of light. Light in anisotropic media, optical activity, light scattering.
Solving the selected numerical problems.

Practical instruction

Selected experimental exercises: Lenses and mirrors, Microscope, Measurement of index of refraction using optical goniometer and Abbe refractometer, Diffraction grating, Photometry, Polarisation of lights.

Weekly teaching load				Other:
Lectures: 3	Exercises: 2	Other forms of teaching: 1	Student research:	