

Modul type: Bachelor Physics / Master Programme for Professors of Physics				
Module title: Optics				
Course status: Obligatory				
ECTS: 7				
Requirements: none				
Learning objectives Goal of the course is to gain understanding of fundamentals of ray- and physical optics, radiometry and photometry, their some application and measurement method techniques.				
Learning outcomes On completion of this module, student should be able to understand basic ideas and reasoning behind the development of basics of optics and photometry and its application. Student should also be able to independently solving the theoretical problems.				
Syllabus <i>Theoretical instruction</i> 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 selected numerical problems. <i>Practical instruction</i> Selected experimental exercises: Lenses and mirrors, Microscope, Measurement of index of refraction using optical goniometer and Abbe refractometer, Diffraction grating, Photometry, Polarisation of lights.				
Literature 1. Eugene Hecht, Optics (4th edition), Addison-Wesley; 4 edition (August 12, 2001). 2. A. N. Matveev, Optics, Mir publishers Moscow (1988). 3. Richard P. Feynman, Robert B. Leighton, and Matthew Sands, The Feynman Lectures on Physics, Addison–Wesley (1964-2005).				
Weekly teaching load				Other:
Lectures: 3	Exercises: 2	Other forms of teaching:	Student research: 1	