Module: Specialization I

Module No.: physics610

Course: Applied Photonics

Course No.: physics619

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+1	6	WT

Requirements:

Preparation:

Form of Testing and Examination:
Requirements for the examination (written or oral): successful work with the exercises

Length of Course:
1 semester

Aims of the Course:
To make the students understand physical and technological foundations of photonics and enable them to practically apply their knowledge in research and development.

Contents of the Course:
Optics: Rays, Beams, Waves;
Waveguides, Fibers
Light sources; Detectors; Imaging devices
Optical amplification; Acoustooptics, electrooptics
Photonic circuits, optical communication
Optical Metrology (angle, distance, velocity, density...);
Material Processing (cutting, welding, lithography, lasers in medicine)

Recommended Literature:
D. Meschede; Optik, Licht und Laser (Teubner, Wiesbaden 2. überarb. Aufl. 2005)
A. Yariv; Photonics: Optical Electronics in Modern Communications (Oxford Univ. Press 6th edition 2006)
B. Saleh, M. Teich; Fundamentals of Photonics (John Wiley & Sons, New York, 1991)
C. Yeh; Applied Photonics (Academic Press, 1994)
R. Menzel; Photonics (Springer, Berlin 2001)