Module: Specialization: Advanced Experimental Physics

Module No.: physics62a

Course: Photonic Devices

Course No.: physics640

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

Requirements for Participation:

Preparation:

Form of Testing and Examination:
Requirements for the examination (written or oral): successful work within 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; Fourieroptics;
Light sources; Detectors; Imaging devices
Waveguides, Fibers; Photonic Crystals; Metamaterials;
Optical amplification; Acoustooptics, electrooptics;
Photonic circuits, optical communication
Applications

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)