

Module: Specialization II

Module No.: physics630

Course: Photonic Devices

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

Requirements:

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)