Photonic Devices - physics640

Degree - M.Sc. in Physics (PO von 2014)

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)