Modules:

physics700 Elective Advanced Lectures physics710 Experimental Physics physics720 Applied Physics





Experimental methods in condensed matter physics (E/A)

Course No.:

Category	Туре	Language	Teaching hours	СР	Semester
Elective	Lecture	English	2	3	WT

Requirements:

Preparation: Basic knowledge in condensed matter physics

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Form of Testing and Examination: Oral examination

Length of Course: 1 semester

Aims of the Course:

Understanding of experimental concepts in condensed matter science Knowledge of basic fields and important applications

Contents of the Course:

The lecture introduces to modern experimental approaches in solid state physics. Basic concepts are illustrated with examples of physical problems investigated employing different methods. Topics covered are Introduction on sample preparation X-ray powder diffraction Specific heat, Thermal expansion Magnetization and magnetic susceptibility DC-Transport Dielectric spectroscopy Photo-emission spectroscopy Inelastic scattering (neutrons, light) THz spectroscopy / Optical spectroscopy (AFM, STM)

Recommended Literature:

Skriptum (available during the course) Bergmann/Schäfer, Experimentalphysik (Band 6: Festkörper) Ibach/Lüth, Festkörperphysik Ashcroft/Mermin, solid state physics