Condensed Matter Physics II (E) - CondMatter II

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

Module	**Elective Advanced Lectures: BCGS Courses**
Module No.	physics70d

Course	**Condensed Matter Physics II (E)**
Course No.	CondMatter II

Category	**Type**	**Language**	**Teaching hours**	**CP**	**Semester**
Elective	Lecture	English	3	4	ST

Requirements for Participation:

Preparation: Basic knowledge in condensed matter physics and quantum mechanics

Form of Testing and Examination: Oral examination

Length of Course: 2 semesters

Aims of the Course: Advanced topics in condensed matter physics with examples of current research.

Contents of the Course:

The entire course (Condensed Matter I & II, given in 2 semesters) covers the following topics:

Crystal structure and binding

Reciprocal space

Lattice dynamics and thermal properties

Electronic structure (free-electron gas, Fermi surface, band structure)

Semiconductors and metals

Transport properties

Dielectric function and screening

Superconductivity

Magnetism

Recommended Literature:

Skriptum (available during the course)

Ashcroft/Mermin: Solid State Physics

Kittel: Introduction to Solid State Physics

Ibach/Lüth: Festkörperphysik