

Module: Elective Advanced Lectures: BCGS Courses

Module No.: physics70d

Course:



Condensed Matter Physics II (E)

Course No.:

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