

Secondary Area of Specialization

Condensed Matter Physics

Module No.: MN-P-PN-CondMat

status quo 08.05.2012

	HPW	estimated effort (h)	credit points
Lecture Course	3 + 2(3)	240	8
Problem Class	1		
Total	6	240	8

Contents

The module is subdivided into core courses and specialized courses:

1. Core Courses:
 - Condensed Matter Physics I (3+1 hpw)
 - Condensed Matter Physics II (3 hpw)
2. Specialized courses:
 - Semiconductor Physics (2 hpw)
 - Superconductivity (2 hpw)
 - Magnetism (2 hpw)
 - Experimental Methods in Condensed Matter Physics (2 hpw)
 - Nanostructures and surfaces
 - and others according announcement

The contents of the specialized courses can be found in the "kommentiertes Vorlesungsverzeichnis".

Literature

Ashcroft Mermin, Solid State Physics (Brooks Cole)
 Kittel, Introduction into solid state physics (Wiley)
 Kittel, Quantum Theory of solids (Wiley)
 Buckel, Supraleitung (Wiley-VCH)
 Fazekas, Electron Correlation and magnetism (World Scientific)

Organization

The Secondary AoS Condensed Matter Physics is composed of the Core Course Condensed Matter Physics I with Problem Class (3+1 hpw) and a specialized course in Condensed Matter Physics (2 hpw). Alternatively the Core Course Condensed Matter Physics II (3 SWS) can be also chosen instead of the specialized course.

Examinations

The module is passed by passing an oral examination covering the topics of all attended courses. The grade given for the module is equal to the grade of the oral examination.

Aims

The student shall deepen his understanding and knowledge about experimental and theoretical concepts in solid state physics and gets insight into selected areas of current research.

Prerequisites for Participation

None

Prerequisites

Fundamentals of Solid State Physics and Quantum Mechanics at the level of the bachelor courses in physics

Frequency

Condensed Matter Physics I is offered each winter term, Condensed Matter Physics II each sommer term.

Soft Skills

None

Use in Other Courses of Study

As elective subject in other M.Sc. programs

Coordinators

M. Braden