

<b>Module:</b>	<b>Elective Advanced Lectures: BCGS Courses</b>
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<b>Module No.:</b> physics70d
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<b>Course:</b>		<b>Condensed Matter Physics II (E)</b>
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<b>Course No.:</b>
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Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture	English	3	4	ST

<b>Requirements for Participation:</b>
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<b>Preparation:</b>
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Basic knowledge in condensed matter physics and quantum mechanics
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<b>Form of Testing and Examination:</b>
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Oral examination
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<b>Length of Course:</b>
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2 semesters
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**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