

# Advanced Solid State Physics

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**Language:** English

**Audience:** Including, but not limited to MSc and PhD students and those from SFB1242

**Start-End dates:** April 24, 2017 - July 24, 2017

**Time and place:** Monday 16:15-17:45, MF 407

**Main text:** Philip Philips, *Advanced solid state physics*, 2nd Ed., 2012

**Other texts:** G. Grosso, et al, *Solid state physics*, 2nd Ed. 2014

J. J. Quinn, et al, *Solid state physics*, Springer 2009

J. Solyom, *Fundamentals of the physics of solids*, Springer 2009

**Topics:**

Fermi surface

Second quantization

Screening and plasmons

Kondo problem

Electron-phonon coupling

Tight-binding approximation

Hartree-Fock approximation

Local moments in conductors

Bosonization

Superconductivity and BCS theory

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**Module:** Vertiefung Theoretische Physik (PHYSIK-M1-VT)