UE Solid state physics II

Niveau d'étude
Bac +4

ECTS
3 crédits

Composante
UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)

- **Langue(s) d'enseignement:** Anglais
- **Ouvert aux étudiants en échange:** Oui
- **Code d'export Apogée:** PAX8NQAA

Présentation

Description

Goal: This solid-state physics class is the follow up of Solid-State Physics I. It goes one step further in the description of solid properties, including light-matter interactions (polarons, polaritons), effects of magnetic field (Landau levels, Fermi surfaces) and new states of matter (introduction to superconductivity and magnetic order).

Content:

- Review of electronic band structures.
- Effects of interactions: plasmons, polarons and polaritons.
- Effects of magnetic field: Landau levels, probe of Fermi surfaces, quantum Hall effect.
- New states of matter : superconductivity, magnetic phases, spin Hamiltonians, magnons.

Bibliography:

Introduction to solid state physics, 8th edition, Charles Kittel
Solid state physics, Neil Ashcroft and David Mermin

Heures d'enseignement

UE Solid state physics II - CM/TD	Cours magistral - Travaux dirigés	24h

Période : Semestre 8

Infos pratiques

Campus

Grenoble - Domaine universitaire