

# Chimica fisica dei solidi

# Outline

- 1 Lectures
- 2 Work plan
- 3 Bibliography

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# Lecture hours

## Orario

This part of the course consists of 24 hrs of lectures, 6hrs per week:

- Tue. 10:00 – 12:00
- Thr. 11:00 – 13:00
- Fri. 11:00 – 13:00

## Contacts

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# Syllabus

## Workplan

### Content of the module

- 1 Crystal lattices
- 2 The reciprocal lattice
- 3 Determination of crystal structure by X-ray diffraction
- 4 Classification of Bravais lattices and crystal structures
- 5 The Drude and Sommerfeld theories of metals
- 6 Electron levels in a periodic potential: general properties
- 7 Electrons in a weak periodic potential
- 8 Tight-binding and other methods for calculating band structure

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# Bibliography

## Textbooks

- 1 N.W. Ashcroft, and N.D. Mermin, *Solid state physics*, 1st Ed. 1976
- 2 C. Kittel, *Introduction to solid state physics*, 8th Ed. Wiley, 2005

## Other textbooks

- 1 W. A. Harrison, *Solid state theory*, Dover books on physics, 1979
- 2 G. Grosso, G. P. Parravicini *Solid state physics*, Academic press 2003