PHYSICS 363 - SOLID-STATE PHYSICS

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TEXT: ***Elementary Solid-State Physics***, M. Ali Omar

The course will focus on material in the first 6 chapters of Omar's book.

Other noteworthy texts:

Introduction to Solid State Physics, 8th ed. Charles Kittel

Solid-State Physics, Neil Ashcroft and David Mermin

GRADING: two hour exams (50%), final (35%), homework (15%)

Initial competences:
Introductory quantum mechanics and thermal physics
Final competences:
Crystal lattices, Miller indices, and crystal structures
X-ray diffraction and the reciprocal lattice
Crystal binding and crystal types
Specific heat, lattice vibrations, neutron diffraction, thermal conductivity
Free electron theory of metals, electronic specific heat
Elementary theories of band structure, nearly free electron model, tight binding model
Semiconductor physics, electrons and holes, effective mass, simple devices

Accommodations for Students with Disabilities:
If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, Williams Hall, Suite 301 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:
Lehigh University endorses The Principles of Our Equitable Community [http://www.lehigh.edu/~inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf]. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.