University of Virginia
Physics Department

PHYS 5620: Solid State Physics (Fall 2014)

Instructor
Jeffrey Teo
Physics Bldg 327C
email: jteo@virginia.edu
Office hour: Tuesday 2pm − 5pm, or by appointment

Lectures
Tuesday and Thursday 12:30pm − 1:45pm, Aug 26 − Dec 04, 2014
Physics Bldg 210

Textbook and references
Charles Kittel, *Introduction to Solid State Physics* (Main text, required)
Neil W. Ashcroft and N. David Mermin, *Solid State Physics*
C. J. Bradley and A. P. Cracknell, *The Mathematical Theory of Symmetry in Solids: Representation Theory for Point Groups and Space Groups*
P. M. Chaikin and T. C. Lubensky, *Principles of Condensed Matter Physics*
Michael P. Marder, *Condensed Matter Physics*

Homework
Roughly once every 2 weeks, due at the *beginning* of class on the due date

Evaluation
Homework 30%, Mid-term 30%, Final 40%

Syllabus
Crystal structure, wave diffraction and reciprocal lattice (Ch.1-2)
Phonons (Ch.4-5)
Free electrons Fermi gas (Ch.6)
Electronic band theory (Ch.7)
Semiconductors (Ch.8)
Superconductors (Ch.10)
Exotic phases of Matter (lectures) *or* Magnetism (Ch.11-12)