

PHY 555 Solid State Physics, Fall 2016

Time and Place: Mon Wed Fri, 11:00-11:53 in B-131, the Solid State Seminar Room

Instructor: Laszlo Mihaly, B-145, Laszlo.mihaly@stonybrook.edu

Office hours: Tue 2:00-3:00, Wed 2:00-3:00 and by appointment

Course WEB page: solidstate.physics.sunysb.edu/teaching/phy555

Course description:

This is the first of a two-semester introduction to solid state physics. No previous knowledge of solid state physics will be assumed, but familiarity with quantum mechanics and E&M is required. Topics include lattice structure (crystals, symmetry groups, X-ray diffraction) and dynamics (phonons), thermodynamics and transport (Drude theory, Sommerfeld theory, Boltzmann equation), band theory (Bloch states, tight binding models), and interactions and symmetry breaking in solids (magnetism, charge density waves and superconductivity). The mathematics required for the course is not too advanced, but the course is very fast paced.

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