

Lecture Hours: Tuesday and Thursday – 6:30 PM – 7:50 PM

Lecture Hall: Room 118 Sharp Lab

Professor: Henry R. Glyde
Rm 229 Sharp Lab
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email: glyde@udel.edu

Office Hours: When in office or by appointment.

Text: Solid State Physics
G. Grosso and G. P. Parravicini
(Academic Press, New York, 2000) ISBN 0-12-304460

This is a second course in Solid State Physics (Condensed Matter Physics). It follows PHYS 624, Introduction to Solid State Physics (Condensed Matter Physics), which is a prerequisite. It precedes a course Advanced Condensed Matter Physics which will be given in the Fall 2007 or Spring 2008. The text book above is the same text as used last time the course was given in Fall 2005. Topics begin with Chapter VIII, review of III and IX and go on to VI, IV, XV, XVI, XVII, X, XI, XVIII. Specifically, the topics included in PHYS 803 are:

- Adiabatic Approximation, Review Electrons and Phonons,
- Electronic properties of selected crystals
- One Electron Approximation,
 - Hartree-Fock
 - Density Functional Theory
- Magnetism
 - Single electrons in a magnetic field
 - Localized Magnetic Moments and Kondo Impurities
 - Magnetic ordering in crystals
- Scattering of Particles by Crystals
- Optical properties (of metals)
- Bose-Einstein Condensation, Superfluidity
- Superconductivity

Come and Bring a Friend.

First Lecture: February 6, 2007

Registration accepted up to February 16, 2007 (last drop/add day).

MARKING SCHEME: Quiz (2) – 1.0 Hours Final – 2.0 Hours
Problems – 30 % Quizzes – 40 % Final- 30-40 %