Physics 5556 (c r n 17768)

Solid State Physics

Spring 2016

Monday, Wednesday 5:30 – 6:45, Robeson 116

Instructor: Jean J. Heremans
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Also books by Madelung, Ibach, Ziman, Harrison, Elliott, and others, to be consulted for completeness in some topics.
Notes are distributed in class on specific topics.

Course coverage:

Phys 5555 and 5556 together cover physics of the solid-state. Phys 5556 can be taken independently from Phys 5555. Phys 5556 covers band structure in semiconductors and metals; Fermi surfaces and their determination; electronic and thermal transport coefficients; Shubnikov-de Haas and quantum Hall effects; surfaces, interfaces, heterostructures; nanoscale effects; electron-electron interaction and correlation effects; cohesion in solids; phonons; some magnetic phenomena.

Office hours: by appointment

Grading: Homework, 40%
Midterm, 20%
Final, 40%

Final: Friday, May 6 at 7 pm to 9 pm
Midterm: in class, to be determined
Homework: one or two problems about once per 1.5 weeks, due the week thereafter.

Reading the material to be covered before class is encouraged to benefit maximally from the lectures.

Accommodation for students with disabilities follows university guidelines.
Honors policy: academic dishonesty will be dealt with per University honor rules.