

Class Hours: MWF 2:00 – 2:50 PM

Classroom: MH4009

Text: Charles Kittel, Introduction to Solid State Physics (8th Edition)

Supplemental Texts: Solid State Physics, by Ashcroft and Mermin

Introductory Solid State Physics, by H. P. Myers

Condensed Matter Physics, by M. P. Marder

Instructor: Professor Yanfa Yan

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Grading

Homework 50%

2 Midterms 30%

Final 20%

Approximate Lecture Schedule (Ch. numbers refer to the book by Kittel)

Week of	Topics	Reading
Aug. 19	Crystal Structure	Ch. 1
(Aug. 26)	NO Class (Conference)	
Aug. 28	Reciprocal Lattice and x-Ray Diffraction	Ch. 2
(Sept. 2)	NO Class (Labor Day)	
Sept. 4	Brilouin Zone, Structure factor, Deby-Walle factor	Ch. 2 App. A
(Sept. 9)	NO Class (Travel)	
Sept. 11	Crystal Binding, Phonons I	Ch. 3, Ch. 4
Sept. 16	Phonon I	Ch. 4
Sept. 23	Phonon II, DOS, Debye and Einstein models	Ch. 5
(Sept. 30)	NO Class (Fall Break)	
(Oct. 2)	NO Class (Conference)	
Oct. 4	Phonons II, scattering, thermal properties	Ch. 5
Oct. 7	Review, Exam 1	Ch. 1 - 4
Oct 14	Free Electron Gas	Ch. 6, App. D
Oct 21	Electrical Conductivity	Ch. 6
Oct. 28	Energy Bands	Ch. 7
Nov. 4	Review, Exam 2	Ch. 5- 7
(Nov. 11)	NO Class (Veterans Day)	
Nov. 13	Semiconductor – introduction	Ch. 7
Nov. 18	Semiconductor – mobility, holes, etc.	Ch. 8
Nov. 25	Fermi surfaces & energy band calculations	Ch. 9
(Nov. 27, 29)	NO Class	
Dec. 2	Fermi surfaces & energy band calculations	Ch. 9
Dec. 9	Review, Final Exam (Dec. 12, 12:30 -2:30)	

Final Exam is on Dec 12 (12:30 – 2:30), 2013.