

PHYS 428 Introductory Solid State Physics

Spring 2015

Instructor: Dr. Byoung C. Choi

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Lecture : T & W & F 9:30 AM – 10:30 AM

Office hours : after class (10:30 – 11:30)

TEXT:

"Introduction to Solid State Physics"

Charles Kittel, 7th or 8th edition.

Other books:

"Solid State Physics", N.W. Ashcroft and N.D. Mermin.

"Solid State Physics", Ibach and Luth.

GRADING:

Grades will be determined by homework completed and exams.

The grades will be approximately determined as given below.

(*There may be some variations from the percentages given.*)

Homework	10%
Midterm Exam	25%
Final Exam	65%

Homework: Due every week.

COURSE OUTLINE:

This course will cover Chapters 1–8 and two special topics (Ch. 10, 11 & 12) in Kittel.

	Subject of Lecture	Chapter
Introduction		
Part I. Structure and Mechanical Properties		
	Structure of Crystals	1
	Diffraction from Crystals, Reciprocal Lattice	2
	Binding of Crystals	3
	Phonons I: Lattice vibrations	4
	Phonons II: Thermal properties	5
Part II. Electronic Properties		
	Electron Fermi Gas	6
	Electron Energy Bands in Crystals	7
	Semiconductors	8
Part III. Special Topics		
	Magnetism	11, 12
	Superconductivity	10