

# PHYS 328 Introductory Solid State Physics

Spring 2016

Instructor: Dr. Byoung C. Choi

Office: Ell 115

Phone: 7731

email: [bchoi@uvic.ca](mailto:bchoi@uvic.ca)

Lecture : T & W & F 9:30 am – 10:20 am

Office hours : 1:30 pm – 2:20 pm

## TEXT:

"Introduction to Solid State Physics"

Charles Kittel, 7<sup>th</sup> or 8<sup>th</sup> 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.

Homework	10%
Midterm Exam	25%
Final Exam	65%

Homework: Due every week.

Assignments posted on the PHYS 328 *CourseSpaces* site on Tuesdays.

## **COURSE OUTLINE:**

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

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