PHYSICS 927, Introduction to Solid States Physics, January 9, 2007

Time: 12:30 pm- 1:45 pm, Tue & Thurs
Place: 202 Brace
Text: Introduction to Solid State Physics By Charles Kittel, (8th edition) John Wiley and Sons, Inc, 2005
Instructor: Sy-Hwang Liou, 364 Behlen, 472-2405, E-mail sliou@unl.edu
Office Hours: Tue & Thus 2:00 pm-4:00 pm or by appointment

Objective:
Crystal structures, Crystal bonding, Phonon, Energy Band, Semiconductor, Fermi surface and metal, Superconductors, Magnetism and Ferroelectrics

References:

(1) Solid State Physics by Gerald Burns, Academic Press, Inc.
(2) Solid State Physics by Ashcroft/Mermin, Holt, Rinehart and Winston
(3) Solid State Physics by J. S. Blakemore, Cambridge University Press
(4) Elements of X-ray Diffraction by B. D. Cullity, Addison-Wesley
(5) A Physicist's Desk Reference, Ed. By Herbert L. Anderson, American Institute of Physics

Structure and grading

The course will consist of two lectures per week. There will be (roughly) weekly problem sets, due at assigned date. Late work will only be accepted if due to illness or emergency.

I encourage you to discuss the problem sets with each other. However, **you may not copy solutions from other students, and the problem sets you submit must be entirely your own work and your own words. If you use a book, journal article, or website, you must cite the relevant material.** If you collaborated strongly with other students, cite them as well - this is intellectual honesty.

The lectures in PowerPoint format will be available over the Web. Please check here (http://my.unl.edu/) if you need a copy.

There will be 3 exams (2 hour exams and a final exam) and a term paper in the course. Grading will be:

5% participation
20% homework
30 % (15% each) hour exams
15% term paper (and a 10-15 min talk)
30% final exam.

A list of possible topics will be discussed in the class. You are also welcome to stop-by my office to discuss other possible topics.

"Participation" is tough to quantify, but I'd like to try this to encourage you to ask questions, particularly about the reading assignments. Trust me - if there's something in the course you find unclear, you're unlikely to be alone. Talking about these topics with each other and with me is a better way to learn the material than trying to do it in a vacuum.

Physics 927 Schedule

Spring 2007

Week	Date	Contents	Homework
1	1/9	Ch-1	
	1/11		
2	1/16	Ch-2	
	1/18		
3	1/23	Ch-3	
	1/25		
4	1/30	Ch-4	
	2/1		
5	2/6	Ch-5	
	2/8		
6	2/13	Ch-6	
	2/15	Exam I.	
7	2/20		
	2/22	Ch-7	
8	2/27		
	3/1	Ch-8	
9	3/6		
	3/8	Ch-9	
10	3/13	Spring Break	
	3/15	Spring Break	
11	3/20		
	3/22	Ch-10	
12	3/27		
	3/29	Ch-11	
13	4/3	Exam II.	
	4/5		
14	4/10	Ch-12	
	4/12		
15	4/17	Ch-16	
	4/19		
16	4/24	Talks (last week)	
	4/26	Talks	
	5/4	Final Exam. 10:00am to 12:00 noon, Friday	

26 Lectures + 2 Talks + 2 Hours exams and a Final