

Syllabus for Condensed Matter Physics I, PHYS 471A Spring 2015 (Jan. 15-Feb. 14)

Lecture

MWF 1:00-2:00 PM, REIC 207

- Instructor:** Ataur R. Chowdhury
- Office:** REIC 118
- Office Hours:** MWF 10:30-11:30 AM
TR 4-5 PM, or feel free to drop in whenever I am in my office.
- Contact:** Phone (907) 474-6109
Fax (907) 474-6130
Email archowdhury@alaska.edu
- Prerequisites:** PHYS 220; PHYS 301; or permission of instructor.
- Text:** Introduction to Solid State Physics, C. Kittel, Eighth Edition, Wiley.
- References:** 1) Elementary Solid State Physics, M. A. Omar
2) Introduction to Solid State Physics, H. P. Myers
3) Solid State Physics, Ibach & Luth
4) Solid State Physics, Ashcroft & Mermin
- Course Objectives:** To acquire a basic understanding of (1) the fundamentals of crystal structure, (2) experimental determination of crystal structures, (3) foundations of crystal binding,(4) phonons and thermal properties, (5) electrical conductivity of solids, (6) energy bands of solids, and (7) semiconductor crystals and Fermi surfaces.
- Credits:** 1 credit: 3 hours of lecture per week.
- Help Session:** Help with the homework is available through the instructor during his designated office hours.

Course Requirements/ Policies:

Class Attendance:

For a better understanding of the course material attendance and participation in classroom activities are very important. This particular course is generally regarded as one of the specialty courses that deals with the fundamentals of classical and modern physics, and it is highly expected that the students will commit themselves to attend the class regularly. There will be supplemental materials for this course and the students will

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be held responsible for all the materials that will be brought in from outside the text. The students will be expected to take part in meaningful discussion and ask questions to better comprehend the subject material.

Homework:

On the average, 4-5 problems will be assigned each week on Fridays. The homework will be due back by 5:00 PM the following Friday. **NO LATE HOMEWORK WILL BE ACCEPTED. NO EXCEPTIONS** (barring emergencies and extreme situations). Group work is highly encouraged for solving problems, and for additional help with the homework the students are most welcome to consult the instructor during the office hour or any other time by prior appointment. Any homework you submit should reflect your own best effort. Copying of homework is absolutely not acceptable and will result in a grade of zero for the assignment.

Examinations:

There will be a final comprehensive examination (Feb. 14, Friday, 1:00-2:00 PM, REIC 207) for this course. Examination will be open-book, open-note and will consist of, in most part, material similar to those in the homework and those worked out in class.

Grading Policy:

Homework	60%
<u>Final</u>	<u>40%</u>
Total	100%

The final grading for this course will be based on a curve, the average of which is usually taken to be the break-point of letter grade B and C, and the standard deviation of the grade point distribution will separate subsequent letter grades. Allowed grades are limited to A,B,C,D,F,IN,BN, and no plus-minus grades will be given for this course.

Academic Honesty

UAF expects and requires academic honesty from all members of the University community, and takes any act of plagiarism and cheating seriously. It is expected that all assignments, including homework and reports, that are turned in for this course must be the original work of the individual student. Failure to comply with this policy will result in penalty as stipulated under UAF regulations.

Disabilities Services

The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Any student who may need assistance with disabilities, should feel free to contact the instructor or directly to the Office of Disabilities Services (208 WHIT, 474-5655, disabilityservices@alaska.edu).