

Physics 630 – Statistical Physics
Ticket 15884 -- Class meeting time: MW 18:30-19:45pm
Spring 2004 in SC1100

Instructor: Dr. Donna Sheng (Office hour: MW 8:30am–9:45am, 11:00am--12:30pm)
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Course Prerequisite: Phys 431, 451 or their equivalents.

Text book: Introduction to Modern Statistical Mechanics, by David Chandler,
Oxford university press.

Objectives:

This course introduces students to thermodynamics and the principles of equilibrium statistical mechanics, as well as the modern topics and concepts such as “order parameters” and “correlation functions”.

Course coverage:

First and second laws of thermodynamics, probability, fluctuation and statistics, application of statistics to canonical ensemble, identical particles, equilibrium distribution function, Fermi and Bose particles, broken symmetry, phase transitions and renormalization group theory.

Grading scheme:

There will be weekly homework assignments. These assignments will be collected every two weeks and the solutions will be given to the students. The homework will make up 25% of the grade. An exam (20%), a midterm (25%) and a final (30%) make up the rest of the grade.

Points to letter grade conversion table:

85-100 A- and A; 70-84 B-,B,B+; 55-69 C-,C,C+; 40-54 D-,D,D+; < 40 F.

It is very important that you do the homework problems. You should expect to spend A lot of time (4-8 hours a week) on them. Please do not hesitate to seek help either from me or from each other.