

## Physics 545A - Statistical Mechanics II

Fall 2008 Tues./Thurs. at 8:00am - 9:15am in Neckers 410

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**Office Hours:** TWR 2pm -4pm or by appointment

### **Course Outline**

Statistical Ensembles, Quantum Statistics, Classical Gas, Classical Statistical Mechanics, Critical Phenomena.

### **Suggested Texts**

The following standard texts are available in the bookstore or library:

"Fundamentals of Statistical and Thermal Physics" F. Reif (McGraw-Hill)

Lecture notes follow the style of this textbook. Reif presents the physics with great clarity, but not as detailed as Pathria and does not cover all the topics of the course.

"Statistical Mechanics" R. K. Pathria, 2<sup>nd</sup> Ed. (Butterworth Heinemann)

This book is encyclopaedic, containing useful pedagogic detail.

### **Other**

"Statistical Physics 3<sup>rd</sup> Ed. (Part 1)", Landau & Lifshitz (BH)

"Statistical Mechanics", D. A. McQuarrie (University Science Books)

"Statistical Mechanics of Phase Transitions", J. M. Yeomans (Oxford)

"Introduction to Phase Transitions and Critical Phenomena", H. E. Stanley (Oxford)

### **Undergraduate level books that are useful**

"Thermal Physics", Kittel & Kroemer, 2<sup>nd</sup> Ed. (Freeman)

"Statistical Physics", F. Mandl, 2<sup>nd</sup> Ed. (Wiley)

### **Grading**

Homework (to be assigned weekly or biweekly)	40%
1 <sup>st</sup> Mid-term Exam	30%
Final Exam	30%

### **FINAL GRADE**

A : >90%; B: 80% - 90%; C: 70% - 79.99%; D: 60% - 69.99%; F: <60%