

Physics 112

Thermal Physics

Instructor: Peter Young (office ISB 212, phone 459-4151, e-mail: peter@ucsc.edu)

Place: Social Sciences 2, Room 075.

Time: Tuesdays and Thursdays, 10:00–11:45 am.

Note: Course materials, such as homework assignments and handouts will be available at my web site

<http://physics.ucsc.edu/~peter/112/>

Books

The recommended book for the course is

- *Thermal Physics* by C. Kittel and Kroemer. In my view, this is the best elementary introduction to statistical mechanics. The version in print is the second edition. The first edition, no longer in print, written by just Kittel, is a little different and I slightly prefer it. You may be able to get a second hand copy at amazon.com. Either edition will be fine.

Kittel and Kroemer has a somewhat unconventional approach to the subject, which I like. Probably the best of the more traditional books is

- *Concepts in Thermal Physics* by S. Blundell and K. Blundell,

Other books, which are on reserve on the library, are

- *Statistical Physics* by F. Mandl
- *Introductory Statistical Mechanics* by Bowley and Sanchez
- *Thermal Physics* by D. V. Schroeder
- *Fundamentals of Statistical and Thermal Physics* by F. Reif

Topics

I will cover Chapters 1-9, the first part of Ch. 14 on the Maxwell velocity distribution, and Ch. 10 (on phase transitions, for which I will add some supplementary material).

Grading

Your performance in the class will be decided on the basis of the midterm, final and homework assignments as follows:

midterm	25%
final	50%
homework	25%

The midterm and final exams will be closed book. You will be allowed to bring one sheet of notes written by yourself (no photocopies) if you wish.

Final Exam

The final exam will be in class on Tuesday, March 20 12:00–3:00 p.m.

Homework

A weekly homework assignment will be handed out and due one week later. It is very important to work hard on the homework problems. You don't really understand a topic until you are able to solve problems in it. The way to learn how to solve problems is through *practice*. You are encouraged to discuss the homework problems with other students. You are also encouraged to attend the discussion section and office hours for additional help, either with problems or bookwork.

Discussion Section

The TA is Eric Carlson, erccarls@ucsc.edu. His office is Interdisciplinary Sciences Building (ISB) 262. The discussion section will be on Thursdays from 6:00–7:10 p.m. in Physical Sciences 110.

Office Hours

My office hour is Mondays, 1:00–2:00 pm. in ISB 212, and at other times by appointment. The TA's office hour is Fridays, 2:30–3:30 pm, in ISB 262.