PHYSICS 181 SPRING 2006

Statistical Mechanics and Thermodynamics

Instructor Eugene Demler, email: demler@cmt.harvard.edu

Office hours: Wednesday 2:00 - 3:00 pm in Lyman 329 (subject to change).

The instructor will be happy to discuss course issues after each lecture in the lecture room, **or** in his office during the office hours, **or** on a "drop-in" basis, **or** by appointment

Teaching Fellows Ari Turner, email: turner@fas.harvard.edu

Loren Hoffman, email: lhoffman@fas.harvard.edu

Review Sections: One or more review sections will be conducted weekly by the teaching fellow(s) to work examples and answer questions about the homework and the course in general.

Course Meetings: MWF, 11:00 - 12:00 in Jefferson 356

Problem Sets: Weekly problem sets

Examination: There will be one midterm in late March during the regular class hour and a 3 hour final exam. These will be closed book exams, unless otherwise announced.

Grading Basis: Problem sets 25%, Midterm 25%, Final exam 50%. There will be no make-up midterm exams; instead, the 25% weight for a missed midterm exam will be added to the final exam.

Required text for the course is Kittel & Kroemer, *Thermal Physics*, which is available at Harvard Coop.

Students are encouraged to read other classic books on Statistical Physics (available on reserve for the course in the Physics library)

Reif, *Fundamentals of statistical and thermal physics*

Landau and Lifshitz, *Statistical Physics Part I*

Pathria, *Statistical Mechanics*

Tentative Course Outline

Introduction

Entropy and Temperature

Boltzman distribution

Thermal radiation

Gibbs distribution

Ideal gas

Fermi and Bose gases

Heat and work

Phase transitions

Kinetic theory

Propogation

Some additional topics may be included