

Physics 404, Spring 2015

Introduction to Statistical Thermodynamics

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Course Goals:

To learn the foundations of thermodynamics and statistical description of physical systems consisting of a *macroscopically* large number of *microscopic* degrees of freedom. Both classical and quantum systems will be covered. We will mostly follow the book of D. V. Schroeder “An introduction to Thermal Physics” (required). For an advanced material, a book by H. Callen “Thermodynamics and an introduction to Thermostatistics” is recommended.

Required text:

D. V. Schroeder “An introduction to Thermal Physics”

Class Schedule:

Tue Thu 12:30 – 13:45

Prerequisites:

PHYS273

It is recommended that you take PHYS401 (Quantum 1) for best results

Course website:

elms.umd.edu

All materials and announcements will be communicated through the course website. Students are encouraged to ask questions to the Professor via the Discussions and Chat tools of the website.

Homework:

- 6 problem sets will be handed on a by-weekly basis.
- Solutions will be posted on the day homework is due.

- Homework will NOT be graded, but it is highly advised that you work hard on it for mastering the course material.

Exams:

There will be three midterm exams:

- a) First is in mid-February to help you to evaluate your readiness for this course.
- b) Two more exams in mid-March and mid-April

The grade of the First midterm can be dropped at the request of the student.

All exams will consist of several problems split into elementary exercises. Problems will be similar to those offered at the end of the Schroeder book chapters.

All exams will be open books/open notes.

Grading:

Midterms 50% Final 50%

Tips for doing well:

- Attend lectures and do not hesitate to ask questions.
- Read the book, and attempt the problems at the end of each chapter.
- Do all the homework independently, and later on analyze the posted solutions

Course Schedule:

TBA