

Physics 468/668 (Spring 2018)

Thermodynamics/Statistical Physics

Mo/We 1:00-2:15 p.m., BPB 250

Instructor Prof. Qiang Zhu
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Office hrs Mo/We 2:15-3:15 p.m.

Course Outline:

- Statistical basis of thermodynamics
- Ensemble theory
- (Micro) canonical ensemble
- Grand canonical ensemble
- Phase transitions

Prerequisite: PHY 182, PHY 467

Credit Hours: 3

Textbook: *Statistical Mechanics*, R. K. Pathria and P. D. Beale

Grade Distribution:

Assignments	30%
Midterm Exam	30%
Final Exam	40%
Extra Credits	10%

Course Description:

This course covers elements of statistical physics from fundamental of classical statistic mechanics to quantum statistics. Approximately, we spend two weeks for each chapter (1-7 in Pathria's textbook). The weekly coverage might change as it depends on the progress of the class. There will be one exam during the semester, either take-home or in-class work. This final exam will cover all materials taught in this semester. You may work with others on the homework, but take-home exams must be done **strictly by yourself**. Barring documentable emergencies or observance of a certifiable religious holiday, all exams must be taken at the time and place specified.

Learning Outcomes:

- understand the microscopic basis for thermodynamics
- understand the macroscopic properties from micro level
- understand phase transition