PHYS430 : Statistical Thermodynamics

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- **Course Web page**: [www.physics.metu.edu.tr/~hande/teaching/430.html](http://www.physics.metu.edu.tr/~hande/teaching/430.html) (will be up soon)

- **Main Textbook**: Introductory Statistical Physics by Roger Bowley and Mariana Sanchez, 2nd edition (available in the bookstore)

- **Additional Textbooks**:
  - Thermodynamics by Enrico Fermi
  - An Introduction to Statistical Thermodynamics by Terrell L. Hill
  - Statistical Mechanics: A Concise Introduction for Chemists by Benjamin Widom

- **Logistics**:
  - **Lectures**:
    - Mon 12:40-14:30 (Rm P6)
    - Thu 12:40-14:30 (Rm P6)
    - Fri 15:40-17:30 (Rm P5)
  - **IMPORTANT!** The Friday lectures are going to be recitation hours. Attendance is mandatory.
  - Although the main textbook is that of Bowley, we will sometimes cover certain parts of the other references in class.

- **Grading**:
  Two in-class midterms (~25% each), in-class final (~30%), attendance, quizzes, homework (~20%). Exact percentages to be determined.

- **Subjects to be covered (TENTATIVE, subject to change)**:
  - **Week 1-3**: Thermodynamics (Ch 1-2)
  - **Week 4-5**: Basic ideas of statistical mechanics (Ch 3-4)
  - **Week 6-7**: The canonical ensemble (Ch 5)
  - **Week 8-9**: Identical particles (Ch 6)
  - **Week 9-10**: Maxwell and Planck's distribution (Ch 7-8)
  - **Week 11**: Grand canonical ensemble (Ch 9)
  - **Week 12**: Fermi and Bose particles (Ch 10)
  - **Week 13-14**: Applications as time permits (phase transitions, renormalization group theory, Monte Carlo, classical fluids)