

Syllabus for PHY325, *Thermal Physics / Statistical Mechanics*

Fall 2018 - TR 9:35AM-10:50AM, Moulton Hall 309

Instructor information

Prof. Justin Bergfield

Office: Moulton Hall 301C

Email: jpbergf@ilstu.edu

Office Hours: TR 2:30-3:30, or by appointment

Course Information

- **Overview / Goals**

- I will introduce the basic thermodynamic and statistical mechanical methods needed to describe the thermal properties of solids, liquids, gases, and nanoscale systems. We will focus on systems from computational physics, condensed matter physics, chemistry, and biology.

- **Textbooks**

- Blundell and Blundell "Concepts in Thermal Physics"
- Additional Text (I'll copy portions which are relevant but these are good references if you are interested)
 - Reif "Fundamentals of Statistical and thermal physics" (precise & rigorous)
 - Kittel & Kroemer "Thermal Physics" (good emphasis on condensed matter)

Course Components

- **Homework**

- Homework will typically be assigned on Thursday at the end of class. Assignments will be available on Reggienet (<http://reggienet.illinoisstate.edu>). No late assignments will be accepted.

- **Exams**

- **There will be 2 in-class exams during the semester, plus a final exam.** You may use a calculator on the exams, but no other devices (phones, laptops, ipods, etc.) will be allowed during the exams. You are also allowed a single page (8.5x11" double sided) of notes if you wish.
- The final exam will be given at the official time during exam week and will be comprehensive.

- **Project**

- Students will complete a computational research project on a topic of their choosing. The projects are intended to be flexible but will generally involve writing code to investigate a physical problem and writing a report discussing how the project relates to ideas discussed in class.

Attendance / Participation

- Regular and punctual attendance is expected during every class meeting. Should you miss a class, you will be responsible for material missed in your absence. The use of cell phones (talking, texting, etc.) during class will not be allowed. Cell phones must remain in your pocket or bag, and must be on silent or powered off during class.

Grading

Homework	40%
In-Class Exams	35%
Project	10%
Final Exam	15%

Final letter grades will be based on the following

89.5–100	A
79.5–89.4	B
69.5–79.4	C
59.5–69.4	D
<59.5	F

Plagiarism and Cheating

Academic integrity is an important part of this University and this course. Students are expected to be honest in all academic work, and a student's placement of his or her name on any academic exercise shall be regarded as assurance that the work is the result of the student's own thought, effort, and study. Students who have questions regarding issues of academic dishonesty should refer to the Code of Student Conduct, B1, which outlines unacceptable behaviors in academic matters. In certain circumstances (such as cheating or plagiarism), I am required to refer a student to Community Rights and Responsibilities for a violation of Illinois State University's Code of Student Conduct.

Students with Disabilities

Any student needing to arrange a reasonable accommodation for a documented disability should contact Disability Concerns at 350 Fell Hall, 309-438-5853, www.disabilityconcerns.ilstu.edu.