Thermodynamics (phys 3141, fall 2026)

When/Where: Mon & Wed, 12:30 pm to 1:45pm, at College of Computing 102

Instructor: Michael Pustilnik
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Office hours: Wed, 3:15 pm - 4:45 pm

> Thermodynamics is the only science about which I am fairly convinced that, within the framework of the applicability of its basic principles, it will never be overthrown.
>
> *Albert Einstein*

Course Description

Introduction to the basic principles of equilibrium macroscopic thermodynamics.

Course Objective

Learning the basic principles and techniques of equilibrium thermodynamics and applying these techniques to the phenomenological description of various physical systems.

Recommended text

C. Adkins, *Equilibrium Thermodynamics, 3d ed.* (Cambridge University Press, 1983).

Assignments, Tests, and Grades

- Homework: **40%** towards the final grade
- Midterm tests: **30%**
- Final exam: **30%**

Homework assignments (6 problem sets, about 30 problems altogether) will be posted at least a week prior to the deadline. Please submit your solutions via Canvas as a single pdf file.

There will be **3 midterm tests**, each consisting of 1 problem on the topics covered since the previous test. The **final exam** (3 problems) will cover the entire course. The midterm tests and the final exam will be the **open book** type.

Grading Policy

Each problem will be graded on the scale of 0 to 5 points (integers only) and weighted as explained above. Getting **85%** of the maximum possible total number of points will

guarantee the letter grade **A**, **70%** will guarantee a **B**, **55%** - a **C**, and **40%** - a **D**, but the actual thresholds may be moved down. Please review the graded solutions and contact the instructor if you believe there are any errors in grading.

Course Policies

Attendance and/or Participation

The course will be taught using conventional, in-person, lecture methods. Attendance is encouraged but not mandatory. Successful completion of this course will require a sustained effort on your part to keep up with the material and understand the topics.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review the Georgia Tech's Honor Code and the student Code of Conduct. Any student suspected of cheating or plagiarism on a test, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact The Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Collaboration and Use of Generative AI

You may collaborate in groups on all homework assignments; however, each student must submit their own individual solutions and be prepared to explain their work to the instructor or TA if requested. All tests and exams must be completed independently. The use of AI tools is strongly discouraged.