

ME 3322: Thermodynamics

Fall 2020

Georgia Institute of Technology

Catalog descriptions: Introduction to thermodynamics. Thermodynamic properties, energy and mass conservation, entropy and the second law, and second law analysis. Thermodynamic analysis of power, refrigeration, and heat pump systems; vapor cycles and gas cycles.

Course outcomes: See ABET syllabus online <http://www.me.gatech.edu/files/ug/me3322.pdf>

Prerequisites: PHYS 2211 Introduction to Physics I and MATH 2403 Differential Equations (C or better).

Textbook: M. J. Moran, H. N. Shapiro, D. D. Boettner, and M. B. Bailey, *Fundamentals of Engineering Thermodynamics*, 9th edn., John Wiley & Sons (2018).

Instructor: Dr. Zhuomin Zhang, Professor of Mechanical Engineering
zhuomin.zhang@me.gatech.edu

Office hours: TBA. You are encouraged to email me for questions.

Website: Handouts, homework, and solutions will be posted on GT Canvas.

Class Time and Location: TBA. Attendance is essential for successful performance in this course. Attendance policy will be announced later.

Homework: Hardcopy homework will be collected during the class. Please read the relevant sections of the textbook before each lecture and read the book examples carefully before doing homework. There will be eleven (11) homework assignments, due before the class as indicated on the schedule. Solutions will be posted on the web after the due date. You are supposed to do all assigned problems or will receive a penalty for each unsolved problem. You may drop one homework assignment. If you turn in all 11 assignments, only the highest 10 sets will be counted. Please try your best to lay down the schematic and explain what assumptions you have made, and put down step-by-step derivations. Only under special circumstances, late homework will be approved ahead of the due date. *You must turn in neatly stapled hard copies with your name on the first page.*

Examination: There will be three in-class quizzes and a final exam. All quizzes and final exam will be closed book, no computer or cell phones allowed. More details will be given later on the policy of cheat sheets. You will need a calculator for all quizzes and the final exam.

Grading Method and Percentage:

- Homework: 15% (Based on 10 highest scores out of 11 assignments)
Quizzes: 50% (each quiz will be graded on 100 base)
(0.25*highest + 0.15*middle + 0.10*lowest score; this gives a curve)
Final exam: 35% (0.35*final score on 100 base)

Letter grade guidelines are given in the following table. The actual scale will be determined after the final exam and may vary slightly according to the class overall performance.

Score Range	90-100	80-89	70-79	60-69	Below 60
Letter Grade	A	B	C	D	F

Academic Honesty: Academic integrity and honesty are essential to achieve high-quality education and to keep the prestige of the institution. We will not tolerate any academic misconduct, such as cheating or other violations of the Georgia Tech Honor Code: <http://osi.gatech.edu/content/honor-code>. Cheating includes but is not limited to: copying directly from unauthorized source, such as friends, classmates or a solutions manual; allowing another person to copy your work; signing another person's name or having another person sign your name on an attendance sheet; taking a test or quiz in someone else's name, or having someone else take a test or quiz in your name; or asking for regrade of a paper that has been altered from its original form.

Tentative Schedule

A tentative schedule will be posted during the first lecture with a detailed syllabus.