

ME-3345-A Heat Transfer Syllabus

Course Name, Section & Credit: Heat Transfer, Section A, 3-credits

Term: Fall 2026

Prerequisite: MATH 2403 Differential Equations (C or better), ME 3322 Thermodynamics, and ME 3340 Fluid Mechanics.

Instructor: Zhuomin Zhang

Email: zhuomin.zhang@me.gatech.edu

General Course Information

Description

Introduction to the study of heat transfer, transport coefficients, steady state conduction, transient conduction, radiative heat transfer, and forced and natural convection.

Course Learning Outcomes

Upon completion of this course, students will demonstrate an understanding of the basic concepts of conduction, radiation, and convection heat transfer, as well as an ability to formulate appropriate mathematical models using energy conservation and the associated thermal boundary conditions. Students will demonstrate the ability to formulate practical heat transfer problems by transforming the physical system into a mathematical model, selecting an appropriate solution technique, and evaluating the significance of results.

Required Course Materials

T. L. Bergman, A. S. Lavine, F. P. Incropera, and D. P. DeWitt, *Fundamentals of Heat and Mass Transfer*, 8th edn., John Wiley & Sons (2017). Either a hardcopy or E-book (PDF) is sufficient.

Additional Information

Course Canvas Site

Course Assessment:

Homework: Please read the relevant sections of the textbook before each lecture and read the book examples carefully before doing homework. There will be ten (10) homework assignments to be submitted online to Canvas. Solutions will be posted on Canvas after the due date. The steps described in Section 1.5 of the textbook MUST be followed in doing homework problems; otherwise, you will not receive full credit even if your answers are correct. Discussing homework among classmates is encouraged; however, you are expected to solve the problems independently. Submit your homework online via Canvas by scanning or photocopying your solutions and combining them to save as a single PDF file (in the proper page order). You may use a computer writing tool, as long as you follow the above requirements, and then convert your solutions into a single PDF file. However, you still need to draw the schematic yourself and cannot cut-and-paste or screenshot from the book assignment. Homework grading will largely be based on effort and whether you have followed the procedure correctly, rather than merely the numerical answers. Any homework extensions must be approved by the instructor well in advance. You may drop one homework assignment. If you turn in all 10 assignments, only the highest 9 sets will be counted. Late homework must be approved by the instructor.

Examination: There will be three in-class quizzes (75 minutes each) and a final exam. Contact the instructor immediately if a (potential) conflict arises. All quizzes will be closed-book and on paper; no computers, tablets, or cell phones are allowed. More details will be given later regarding the policy on cheat sheets. You will need a regular calculator for all quizzes.

Attendance and/or Participation

While attendance will not be recorded, students are expected to attend the lectures regularly as well as to participate in class discussions. Class attendance is an important component of learning in order to succeed in this class. Regularly attending classes will facilitate understanding of the course materials and communications between the student and instructor as well as among students.

Grading Policy:

Homework: 12% (Based on 9 highest scores out of 10 assignments)

Quizzes: 63% (each quiz will be graded on 100 base)

(0.25*highest + 0.21*second highest + 0.17*lowest score)

Final exam: 25%

Letter grade: A (90-100); B (80-89); C (70-79); D (60-69); F (<60)

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 [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

Not applicable.

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 email me as soon as possible in order to set up a time to discuss your learning 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.

Other Information

Office hours, schedule of homework due dates and quizzes, and other materials will be available via Canvas course website.