

Instructor: Martin Short

Office: Skiles 220

Office Hours: M 10 am – 12 noon, W 10 am – 11 am (or by appointment)

Contact: mbshort@math.gatech.edu, (404) 894-3312

Important Websites

Instructor's Web Page: <http://www.math.gatech.edu/~mshort9>

Georgia Tech Honor Code: <http://www.honor.gatech.edu/>

Course Information: <https://t-square.gatech.edu/> (*required*)

General Course Information

Course Title: Classical Mathematical Methods in Engineering

Text: *Boundary Value Problems and Partial Differential Equations*, 6th Edition, David L. Powers

Lectures: MW 3 pm – 4:30 pm, Sustainable Ed. 110

Course Requirements and Grading

HOMEWORK: Homework assignments will be posted to the course T-Square site each Monday, to be due the following Monday (generally, see the course schedule below for exceptions) at the end of lecture. Homework should be neat and easy to read and follow. You are encouraged to work in groups on homework assignments, but each person must turn in their own pages.

Homework solutions (possibly only partial) will be posted as soon as possible after the due date. The lowest two homework grades will be dropped when calculating final grades. For this reason, **no late homework will ever be accepted, for any reason.**

Homework will be worth **20%** of your final grade.

EXAMS: There will be two exams during the semester. Exams will take place during lecture times, and are **tentatively** scheduled for **2-19** and **3-26** (see the course schedule below). No books, notes, calculators, cell phones, or other electronic devices are allowed during exams. Each exam will be worth **20%** of your final grade. If you happen to miss an exam during the semester for a **legitimate, documented reason**, then I will simply ignore that exam and add its weight to the final exam (making the final exam worth 60% of your grade for 1 missed exam) when calculating your final grade.

FINAL EXAM: The final exam will cover all course materials. All students must take the final exam to complete the course. It is worth **40%** of your overall grade.

The grading breakdown, then, is as follows:

Homeworks, lowest two scores dropped 20%

Exam 1 20%

Exam 2 20%

Final Exam 40%

Final letter grades will be calculated on a curved scale. Therefore, I cannot (unfortunately) tell you up front precisely how final numerical course grades will translate into letter grades. However, I will, at several key points throughout the semester, give a rough breakdown of where **current** letter grade cutoffs lie, so that you will be able to evaluate your current performance as the semester unfolds.

The learning objectives for Math 4581 are as follows:

- Students will learn and apply Fourier series and integrals, and use them in solving differential equations.
- Students will learn solution methods for the heat equation, wave equation, and Laplace's equation, and be able to apply them in several dimensions and with various boundary conditions.
- Students will learn and apply the Laplace transform, and use it in solving differential equations.

Very Tentative Course Schedule (subject to change!)
DISTANCE LEARNING STUDENTS ARE 1 WEEK OFF FROM THIS SCHEDULE

<u>Date</u>	<u>Chapters/homework (HW) due/exam</u>
Monday, 1-6.....	0.1, 0.2
Wednesday, 1-8	0.2, 0.3
Monday, 1-13.....	1.1, 1.2, HW 1
Wednesday, 1-15	1.2, 1.5
Monday, 1-20.....	SCHOOL HOLIDAY
Wednesday, 1-22	1.9-1.11, HW 2
Monday, 1-27.....	2.1, 2.2, HW 3
Wednesday, 1-29	2.3, 2.4
Monday, 2-3.....	2.5, 2.6, HW 4
Wednesday, 2-5	2.7, 2.8
Monday, 2-10.....	2.9, 2.10, HW 5
Wednesday, 2-12	2.10, 2.11
Monday, 2-17.....	3.2, 3.2, HW 6
Wednesday, 2-19	EXAM 1
Monday, 2-24.....	3.3, 3.4, HW 7
Wednesday, 2-26	3.4, 3.6

<u>Date</u>	<u>Chapters/homework (HW) due/exam</u>
Monday, 3-3.....	4.1, 4.2, HW 8
Wednesday, 3-5.....	4.2, 4.3
Monday, 3-10.....	4.4, 4.5, HW 9
Wednesday, 3-12.....	5.1-5.3
Monday, 3-17.....	SCHOOL HOLIDAY
Wednesday, 3-19.....	SCHOOL HOLIDAY
Monday, 3-24.....	5.4-5.6, HW 10
Wednesday, 3-26.....	EXAM 2
Monday, 3-31	5.7, 5.8, HW 11
Wednesday, 4-2.....	5.9, 5.10
Monday, 4-7.....	6.1, HW 12
Wednesday, 4-9.....	6.2
Monday, 4-14.....	6.3, HW 13
Wednesday, 4-16.....	6.4
Monday, 4-21	Review for Final Exam, HW 14
Wednesday, 4-23.....	Review for Final Exam