

PARTIAL DIFFERENTIAL EQUATIONS

St. Olaf College • Math 330

Prof. Matthew Wright • Fall 2017

Text: *Applied Partial Differential Equations*, 5th Edition, by Haberman

Meeting Times: Tuesday 8:00–9:25, Thursday 8:00–9:20

Location: Tomson 186

Office Hours: Mon. 2–3, Tues. 9:45–10:45, Wed. 9–10, Thurs. 1–2, Fri. 10:30–11:30, or by appointment in RMS 405

Contact info: wright5@stolaf.edu

Web Site

The course web site is:

<http://math330.mlwright.org/>

You will refer to this web site frequently for homework assignments and course files.

Course Material

Partial differential equations arise as models of physical phenomena across many disciplines. Examples include the spread of heat, flow of fluids, diffusion of chemicals, structure of molecules, radiation of electromagnetic waves, biological motion and chemotaxis, spread of disease, and pattern formation. This semester, we will study partial differential equations, how they arise from physical principles and conservation laws, how they model physical behavior, and how to construct and interpret solutions to them.

The professor intends to cover material from Chapters 1 through 7 in the textbook, though we won't have time for every topic in these chapters. See the course web site for a tentative schedule.

Grading

Your final grade will be a weighted average of the following:

Homework:	20%
Participation:	5%
Exam 1:	25%
Exam 2:	25%
Final Project:	25%

Homework

A strong commitment to solving problems outside of the classroom is crucial for your success in this course. Homework consisting of problems from the textbook and supplemental problems will be assigned and collected weekly.

Your solutions must be typed (in *LaTeX*) and submitted. Discussion of homework problems is encouraged, but *each student must turn in their own work*. Late work will *not* be accepted, but the lowest homework score for each student will be dropped.

Participation and Readings

Participation involves being prepared for and participating in class. In particular, the professor expects you to complete the assigned reading before each class. Reading the book before class will help you to stay on top of the material and get the most out of class.

The course website includes a form for submitting questions about the reading. You are required to submit a question about at least five of the reading assignments throughout the semester. The professor will use the submitted questions to guide each day of class.

Exams

There will be two take-home exams in this course. Tentatively, Exam 1 will be due on October 10 and Exam 2 will be due on November 21.

Final Project

You will work with a team of students on a final project on a partial differential equations topic of your choice. The project will result in a paper and a presentation. Presentations will take place in the final exam period (Tuesday, Dec. 19, 9 – 11am).

Academic Integrity

Claiming someone else's work as your own will earn you a failing grade on the work in question. Don't do it. For more information, see the *Academic Integrity* section of *The Book* (wp.stolaf.edu/thebook/academic/integrity).

Disability and Access

Prof. Wright is committed to supporting the learning of all students. If you have already registered with Disability and Access (DAC) and have your letter of accommodations, please meet with the professor early in the course to discuss, plan, and implement your accommodations in the course. If you have or think you have a disability please contact the Disability and Access office at 507-786-3288 or wp.stolaf.edu/asc/dac.