PARTIAL DIFFERENTIAL EQUATIONS

St. Olaf College · Math 330

Prof. Matthew Wright · Fall 2018

Meeting Times: Tuesdays 11:45–1:10 and Thursdays 12:45–2:05
Location: Tomson 184
Office Hours: Mon. 1–2, Tues. 10–11, Wed. 2–3, Thurs. 10–11, Fri. 1–2, whenever the door is open, or by appointment in RMS 405
Professor's Contact Info: wright5@stolaf.edu

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

Help Sessions: Tuesdays, 7–8pm, in Tomson 186

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, 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:

Reading Questions:	5%
Homework:	35%
Exam 1:	20%
Exam 2:	20%
Final Project:	20%

Reading Questions

The textbook is an important resource for this class, but easy reading it is not. The professor will assign readings, paired with comprehension questions. Answers to these questions will be due at the beginning of class and will be graded for completion. Thorough, active reading of the assigned textbook sections will help you to stay on top of the material and get the most out of this course.

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* (this requirement will be phased in over the first several assignments). 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.

Exams

There will be two take-home exams in this course. Tentatively, Exam 1 will be due on October 9 and Exam 2 will be due on November 20.

Final Project

You will work with a team of students on a final project on a topic of your choice involving partial differential equations. The project will result in a paper and a presentation. Presentations will take place in the final exam period (Wednesday, Dec. 19, 2 – 4pm). As you plan your holiday travel, make sure that you will be present for the final exam period for this course!

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.