PARTIAL DIFFERENTIAL EQUATIONS
Tu-Th 2-3:15, MTH 0411

Instructor
Dr. Ricardo H. NOCHETTO
Office MTH 3310, Office Hours: Mo and We: 4:30-5:30 (or by appointment)
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Grader
Shuo Yang, office hour Fri 11-12, MATH 1305, shuoyang@math.umd.edu

Objectives
This course is an introduction to partial differential equations (PDE). We will discuss
first order equations, the heat equation, the wave equation and the Poisson equation, the
last three being the prototype of second order equations. We will also discuss nonlin-
ear equations of each type. We will develop the method of separation of variables and
eigenfunction expansions, which lead to Fourier analysis. Qualitative properties and nu-
merical methods will also be studied. This corresponds to Chapters 1 to 8 of [1] (except
7). MATLAB will be used mostly for graphical purposes and illustrative computation
using [2]. You can access MATLAB in the Computer Labs or on your PC, if you have the
Student Version or the Student Edition of MATLAB. In the Computer Labs, MATLAB
is on the PCs and MACs. The Student Version is available in the Terrapin Technology
Store (Stamp Union) and on the MathWorks website www.mathworks.com.

Texts
54868-5.

[2] Jeffery M. Cooper, Introduction to Partial Differential Equations with MATLAB,

Grading Policy
The final grade will be based on homeworks (25%), quizzes (5%), two exams (20% each),
and a final exam (30%). No make-up exams will be given, unless a written
excuse is presented in advance and in accordance with University Policies. Computer
exercises will use MATLAB. Homeworks will be assigned weekly and will be due before
class starts. There will be a penalty of 10% for one day late, 20% for two days, and so
on. Homework will not be accepted after one week.
Exam 1: §1 and part of §2 (≈ Thursday October 4).
Final Exam: §§1-6, §8 (Saturday, December 15, 10:30am-12:30pm).

Prerequisites
Calculus MATH 240, 241 and Elementary ODE MATH 246 (or equivalent).