

Introduction to PDE

Math 557

INSTRUCTOR INFORMATION:

Instructor: Tatiana Toro

Office: Padelford C-343, Phone: 543-1173.

E-mail: toro@math.washington.edu

Office hours: Monday 10:30-11:30, Friday 1:30-2:30 or by appointment.

This is the first course of a three quarter introduction to Partial Differential Equations. During the Fall and Winter, we will mostly follow L.C. Evans' book *Partial Differential Equations*. This is a list of the topics I intend to cover:

1. Representation formulas for solutions
 - (a) Transport equation
 - (b) Laplace's equation
 - (c) Heat equation
 - (d) Wave equation
 - (e) Schrödinger equation (?)
 - (f) Nonlinear first-order PDE
2. Theory for linear partial differential equations
 - (a) Sobolev spaces
 - (b) Second-order elliptic equations
 - (c) Linear evolution equations

RESERVE LIST:

- Partial Differential Equations, L.C. Evans, AMS, Graduate Texts In Math (recommended textbook).
- Elliptic Partial Differential Equations of Second Order, D. Gilbarg and N. Trudinger.

REMARKS:

- Homework will be due on October 29th and on December 3rd, 2008.
- Students are expected to be familiar with the topics treated in the Appendices of Evans' book.