

Math 219, Applied Mathematics II

Dr. Xiaofeng Ren

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Office hours: 2:00 PM - 3:00 PM, WF, or by appointment.

Class time and place. 9:35AM - 10:50AM Wednesday and Friday, Monroe B33.

Textbook. Partial Differential Equations, by L.C. Evans.

Course Objectives:

1. Students will be able to use Green's function to solve Laplace's equation and Poisson's equation.
2. Students will be able to use the fundamental solution to solve the heat equation.
3. Students will learn Sobolev spaces, Lax-Milgram theorem, Fredholm alternative to solve second order elliptic PDEs.
4. Students will learn the maximum principle and the regularity theory.
5. Students will learn Galerkin's approximation technique to solve evolution equations.

Your grade.

Grade (100%) = Final exam (30%) + Two Midterm exams (40%) + Homework (30%)

Homework. There will be about one homework assignment every two weeks. Each assignment is due one week later.

Tentative schedule.

- Chapter 2.
- Chapter 4.
- Midterm Exam 1.
- Chapters 5.
- Chapter 6.
- Midterm exam II.
- Chapters 7.
- Final exam (comprehensive).