

Syllabus for M514

PDE: Partial Differential Equations

Instructor: Yuxi Zheng (January 5, 2004)

Lecture Schedule: MWF 10:10-11:00AM, 315 Willard Building

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Office hours: Tue, Wed, Fri: 11:15-11:59am.

This is the second part of the primary PDE course for mathematical graduate students, who are preparing for the Ph.D. qualifying examination.

Prerequisite is M513 or equivalent familiarity with PDEs. As this course needs a lot of real analysis, students are advised to be well prepared in analysis such as M504 (Analysis in Euclidean Space) and M509 (Linear Analysis with Applications I).

1. Text: *Partial Differential Equations*, by Lawrence C. Evans. Chapters 5 –11.

2. Homework: Visit <http://www.math.psu.edu/yzheng/m514index.html>

Schedule: One assignment is given early each week and due the Wednesday of the following week. Students are encouraged to work on all problems of the assignments. However, the problems in the assignments are graded selectively only.

3. Examinations:

There will be one midterm exam (date: Monday March 1) and one final exam. The final course grade will be determined as follows:

$$30\% \text{ homework} + 30\% \text{ midterm exam} + 40\% \text{ final exam.}$$

4. Makeup exam policy: No makeup exams allowed. Missed mid-term exam will be substituted by the final exam. Missed Final Exam will result in F for the course. Severe sickness and other compelling reasons for missing the final exam need show formal documentation.

5. Academic integrity policy: All Penn State Policies regarding ethics and honorable behavior apply to this course.

6. Reference books:

Fritz John, Partial Differential Equations.

Walter Strauss, Partial Differential Equations, An Introduction.

Renardy and Rogers, An Introduction to Partial Differential Equations.

DiBenedetto, Partial Differential Equations.

Robert C. McOwen, Partial Differential Equations.

H. F. Weinberger, A First Course in Partial Differential Equations with Complex Variables and Transform Methods, Dover.