

Syllabus: Math 8590, Topics in PDEs

Place and time: VinH 364, MWF 2:30–3:20

Instructor: Peter Poláčik

Office hours: Monday and Friday 3:35–5:00.

Course description: This course will be devoted to qualitative studies of parabolic equations. We will examine properties of solutions of linear and nonlinear equations related—often only in the way they are proved—to their nodal structure. My goal is to show you some general aspects of the qualitative theory of parabolic PDEs as well as some simple yet powerful tools in the analysis.

Text: No text is required.

Prerequisites: Knowledge of Lebesgue spaces will be assumed. We will also need basics from Sobolev spaces. You can find all these in L.C. Evans, *Partial differential equations* or R.C. McOwen, *Partial differential equations*.

Grading: The final grade will be based on homework assignments.