Mth 623: Advanced Differential Equations - III

Instructor: Dacian N. Daescu
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Office Hours: 12:30 - 13:30 TR. Also by appointment.

Class Time and Location: TR 14:00 - 15:15 Neuberger Hall 346

Textbook: No textbook is required. Lectures will cover topics selected from the list of references.

References:


Final Examination: Monday, June 6, 10:15-12:05, in class

Course web site: Syllabus, homework assignments, and other information about the course will be available on the web site: http://www.mth.pdx.edu/~daescu/mth623.html
Students are responsible for checking this site on a regular basis.

Course Description: The course will cover modern theory and applications of partial differential equations. Topics will be selected from the theory of nonlinear PDEs:

- Fixed point methods, Leray-Schauder theorem, applications to stationary Navier-Stokes equations.
- Reaction-diffusion equations. Local existence, energy estimates, finite time blow-up.

Student Learning Objectives: To become familiar with fundamental topics in the modern theory and solution techniques for PDEs; to build the skills and understanding necessary to pursue further research in the field of PDEs.

Prerequisites: Mth 621, Mth 622.

Grading Policy: The final grade will be based on homework and a final exam, as follows:

1. Homework, 75% of the course grade
2. Final Exam, 25% of the course grade. The final exam will be take-home and assigned two-weeks prior to the end of the term. Each student is required to hand in written solutions by the time of the final examination.

In assigning final course grades, plus/minus grading will be used.
Main criteria for evaluating your work will be: correctness, completeness, and clarity of the presentation.