MATH 301  
Spring 2004-05

Numerical Methods for Differential Equations

Instructor: Dr. Georgi Medvedev  
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Lectures: TR 2-3:20, Curtis 452  
Office hours: R 3:30-4:30 or by appointment

Course webpage: www.math.drexel.edu/medvedev/classes/spring/math301/
will contain homework assignments, announcements, and supplementary materials.

The course objective is to introduce students to the methods of numerical solution of initial and boundary value problems for ordinary and partial differential equations.


Content: The course will cover Chapters 5, 10-12.

MATLAB is a powerful numerical software package. It is widely used for solving research and industrial problems. We will gradually develop basic skills of using MATLAB through the in-class examples and homework problems. Most homework assignments will contain problems to be solved numerically in MATLAB.

Getting Started with MATLAB: a Quick Introduction for Scientists and Engineers, by R Pratap, is a well-written introduction to MATLAB (this book is not required).

Homework: Homework problems will be assigned in class and will be posted on the course website. Selected problems from each set will be graded.

Solutions to the homework problems should be presented in the order the problems were assigned. Every solution should be given a concise but sufficient explanation and written up legibly. Additional guidelines for presenting solutions to problems involving MATLAB programming will be given during the course. The set of solutions for each homework should be stapled. One late homework will be accepted up to seven days after the due date, with or without excuse, and without penalty. No other late homeworks will be accepted.

Students are encouraged to discuss the homework and to work together on the problems. However, each student is responsible for the final preparation of his or her own homework papers. Copying of another student’s homework is not permitted.

Examinations: There will be two midterm and one final examinations. The dates will be announced in advance. There will be no makeup exams unless you have exceptional circumstances, which prevented you from taking exam in class. In this case, you should contact me at least one day before the exam.

Assessment: Your final grade will be based on your performance on the homework projects (30%), midterm 1 (20%), midterm 2 (20%) and final exam (30%).

Problem resolution: Please come to see me if you have any course related questions or problems. The best way to get in touch with me is by email. If you would like to make an appointment please send me an email with your time constraints and preferences. Also, feel