

Math 211: Ordinary Differential Equations and Linear Algebra

Rice University, Spring 2005

All of this information and more can be found at the course web page: <http://www.math.rice.edu/~theron/Math211/index.html>

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office hours: TR 2:30-4 pm, Wednesday 11am-noon, and by appointment

Material: This class is an introduction to differential equations and linear algebra. The class should appeal to anyone with an interest in any science, as differential equations is the part of mathematics most used by scientists (of all types) to describe the world.

Most of the semester will be a focus on the basic principles of differential equations. There will be an interlude on basic linear algebra to prepare us for understanding the nature of *systems* of differential equations and higher order equations.

Textbook: Polking, Boggess and Arnold, *Differential Equations*, Prentice-Hall 2001 and the accompanying computer manual:
Polking and Arnold, *Ordinary Differential Equations using MATLAB*, Prentice-Hall 2004

Help Sessions: The Graduate student teaching assistants for this course will hold weekly help sessions more info on the course webpage.

Grades: homework is 10%, two midterm exams 20% each, final exam for 25%. The initial project will be 5% and the final project will be 20%

Homework: Homework is very important for success in this course. It is essential that you practice the skills that we discuss. Please work together on these assignments and while studying. Each student is required to turn in their own individual written homework. Problem sets will be posted on my web page and one will be due (almost) every week.

Exams: Midterm exams will be held out of class. Our dates are Thursday, February 17 and Tuesday, April 5.

Projects: During this course, students will complete two independent projects in differential equations. The first will be a warm-up, really. Where the mathematics will not be as challenging, and the focus will be more on presentation and write-up. The final project is a major part of the course. It will involve most (if not all) of the major themes of the course, and will require significant effort. I will announce the topics for these later in the term. For more information on the type of things you should expect, see the course webpage.

MATLAB: We will use MATLAB (a computer algebra system) a great deal to help with computations and visualizations, so it is important to have your OwlNet account setup properly. For more information on this facet of the course, see the webpages

*<http://www.owl.net.rice.edu/~math211/bcomp.html> and
<https://www.owl.net.rice.edu/FAQ/cache/372.html>*

provided by OwlNet. Familiarize yourself with this stuff as soon as possible.

Accommodations: *Any student with a disability requiring accommodations in this course is encouraged to contact me after class or during office hours. Additionally, students should contact Disability Support Services in the Ley Student Center.*